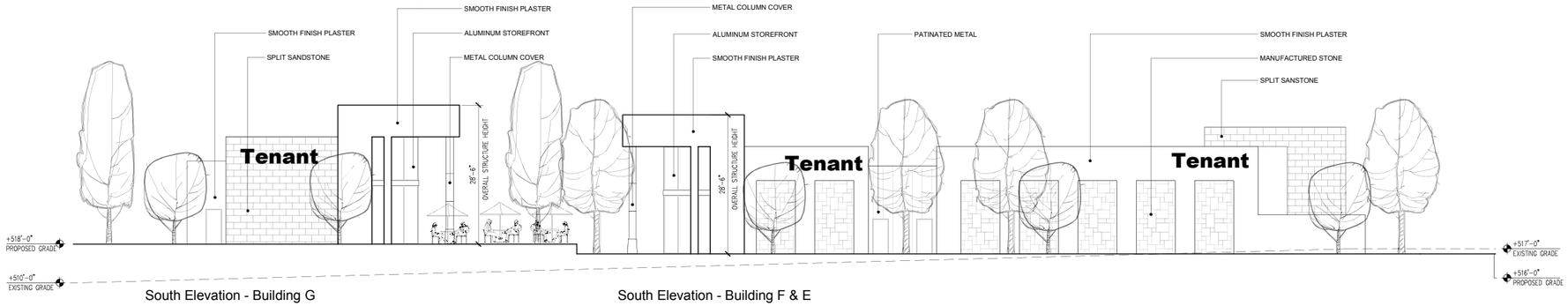
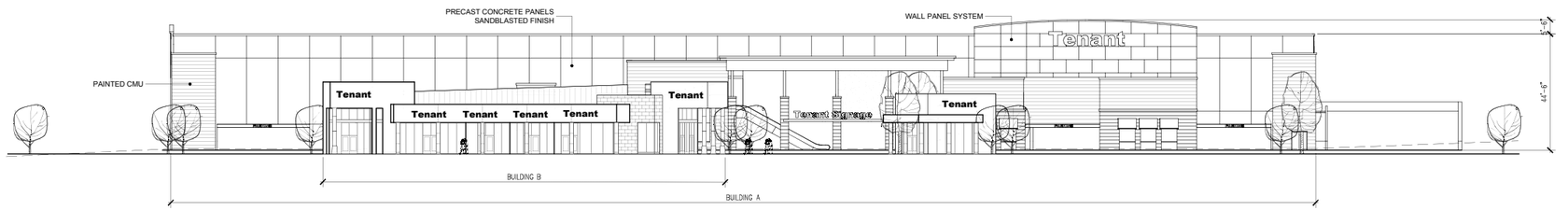
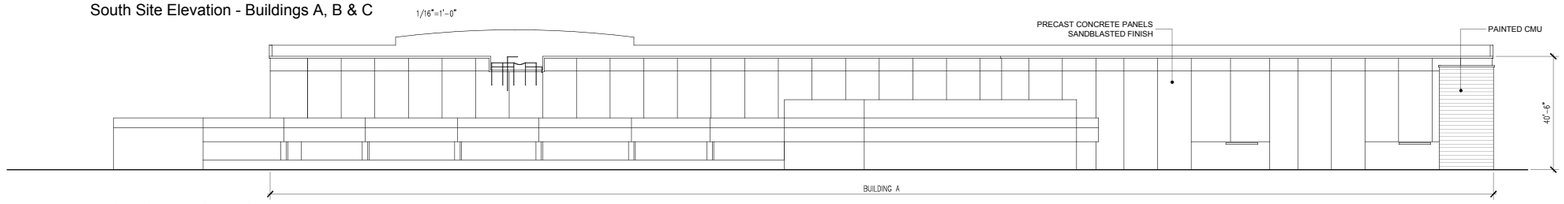


Figure 5.3-2a. *Exterior Elevations*

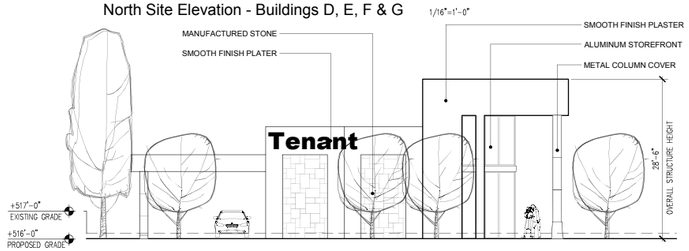


South Site Elevation - Buildings A, B & C 1/16"=1'-0"

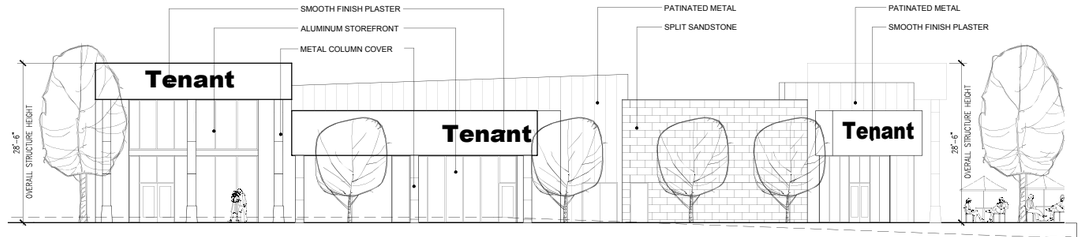


North Site Elevation - Building A 1/16"=1'-0"

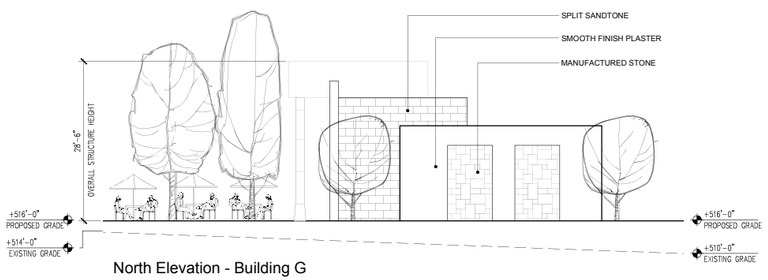
North Site Elevation - Buildings D, E, F & G 1/16"=1'-0"



North Elevation - Building D



North Elevation - Buildings E & F



North Elevation - Building G

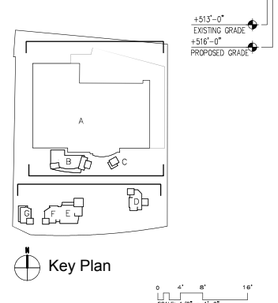
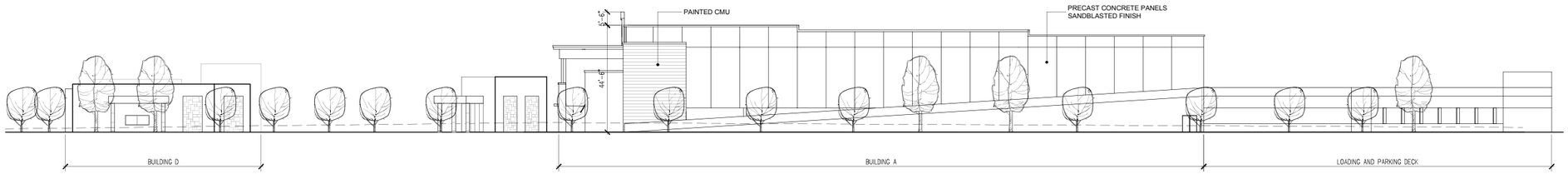
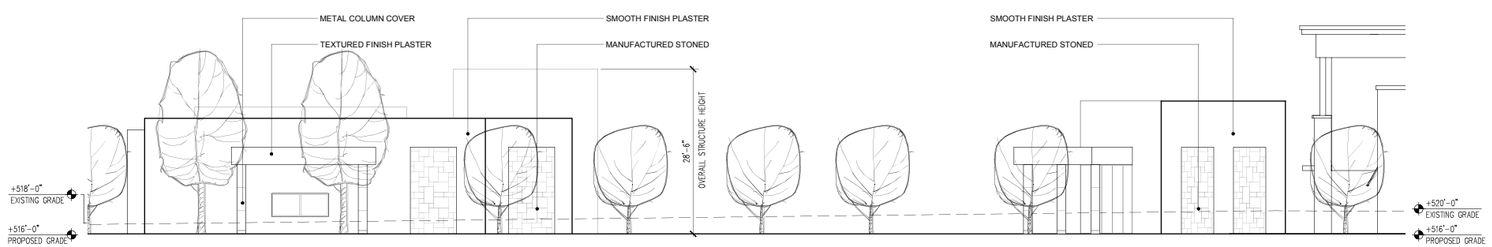


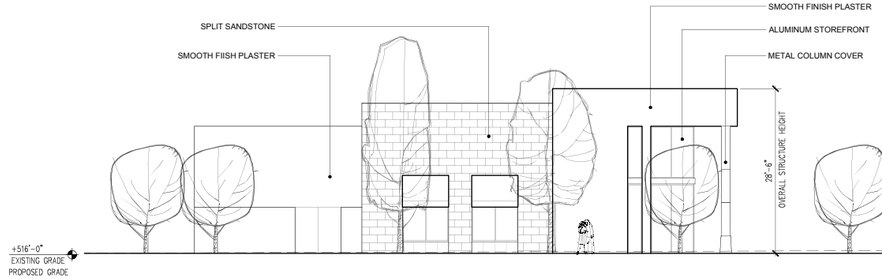
Figure 5.3-2b. *Exterior Elevations*



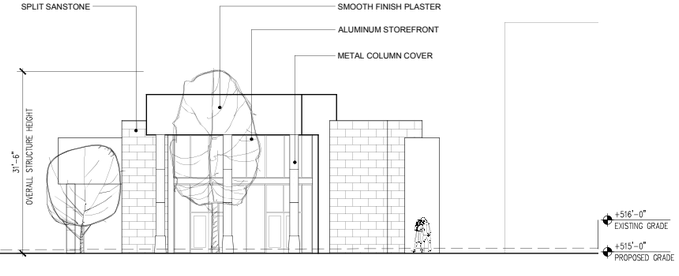
East Site Elevation - Buildings D, C & A 1/16"=1'-0"



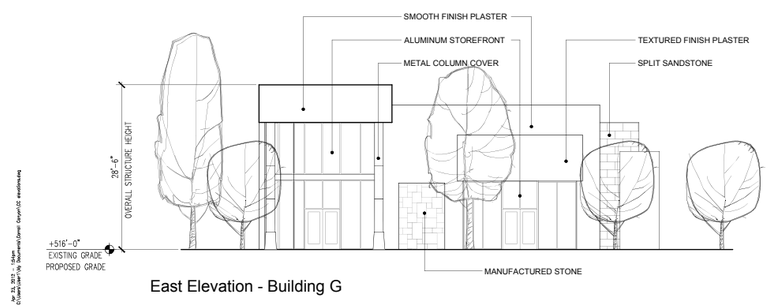
East Elevation - Building D & C



East Elevation - Building E



East Elevation - Building B



East Elevation - Building G

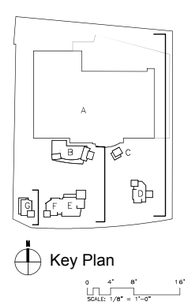


Figure 5.3-2c. *Exterior Elevations*

Signage for the Carroll Canyon Commercial Center project would include major tenant signage, secondary signage for smaller shops and tenants, project monumentation, and freestanding project identification and directional signs. Figure 5.3-3, *Sign Program Key Map*, shows the general location of proposed project signage. Figures 5.3-4a – 5.3-4c, shows the general design of project signs.

Proposed signage for the Carroll Canyon Commercial Center not would create a disorganized appearance and would not substantially conflict with the City's Sign Ordinance. Instead, the Sign Program proposed for the project would unify project signage in a cohesive manner, with a general sign theme that would be carried out for all project signage. As shown in Figures 5.3-3a – 5.3-3d, signage would feature stone veneer, aluminum framing, and would be designed to match building architecture. No significant impacts associated with the proposed Sign Program would occur.

Significance of Impacts

The project's impacts on the visual character and quality of the surrounding environment is less than significant, and the proposed project would not result in a substantial degradation of the existing visual character or quality of the site or its surroundings.

Mitigation Measures

The project does not result in significant impacts. No mitigation is required.

Issue 4

Would the project result in bulk, scale, materials, or style that are incompatible with surrounding development?

Impact Analysis

As discussed in *Issue 3*, above, the project area is characterized by existing small commercial retail centers, light industrial uses, and business park developments with finishes of predominantly concrete and stucco. Proposed project development would include articulation with materials such as aluminum, metal, split sandstone, and smooth finish plaster. Although project materials would be different from what exists currently, the higher-quality finishes and style would not result in an incongruous site design or incompatibility with the surrounding community. Project impacts would be less than significant.

Project bulk would be largely consistent with existing development, as the general footprint of large industrial parks are similar to the footprints of some of the existing developments. Project design features would be incorporated to further minimize project bulk. The height of proposed buildings within the project would not exceed 50 feet, which is less than the 60 feet height allowed by the proposed CR-2-1 zone. The project would not result in a bulk that is incompatible with surrounding development.

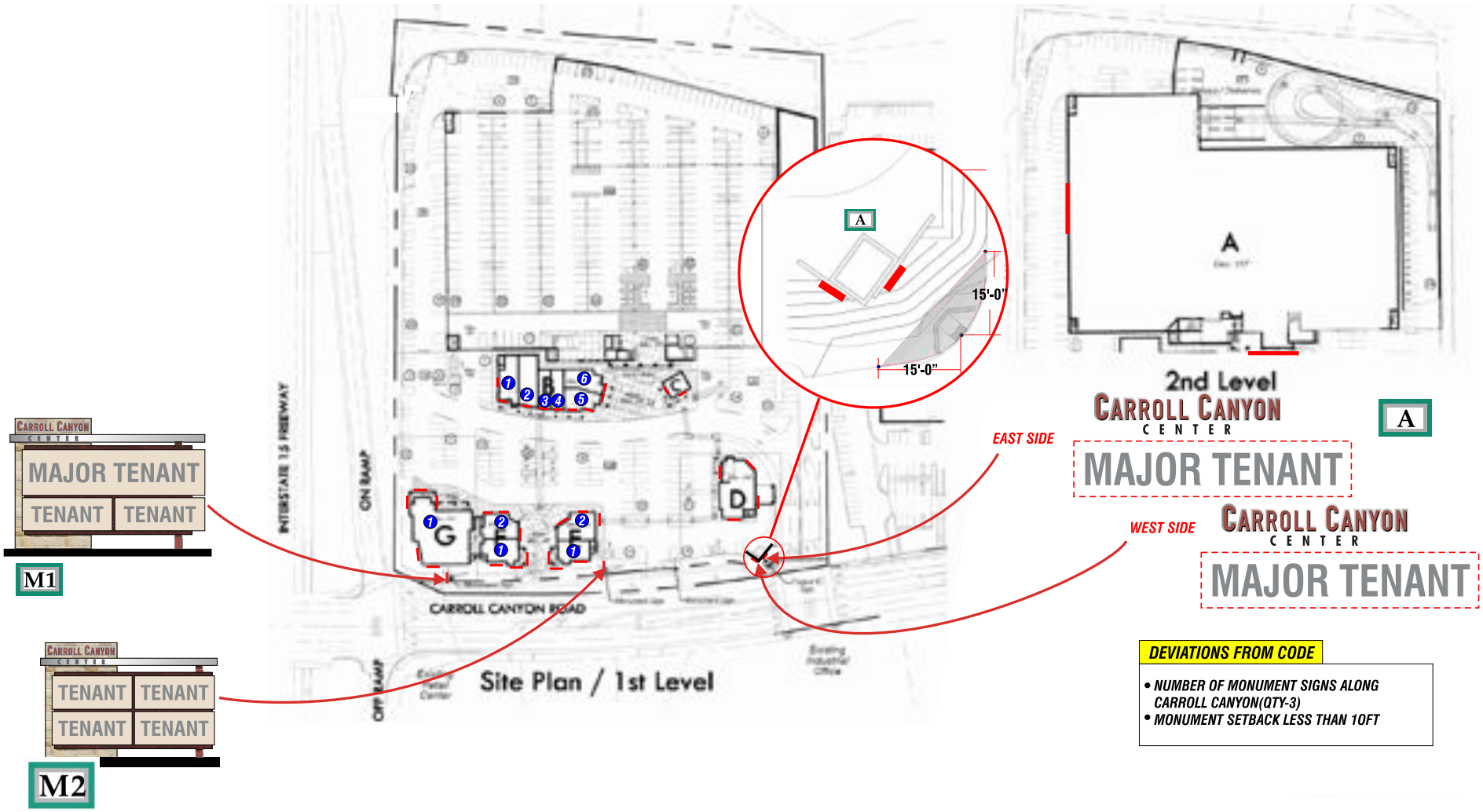


Figure 5.3-3. ***Sign Program Key Map***

Figure 5.3-4a. ***Carroll Canyon Commercial Center – Sample Monumentation Signage***

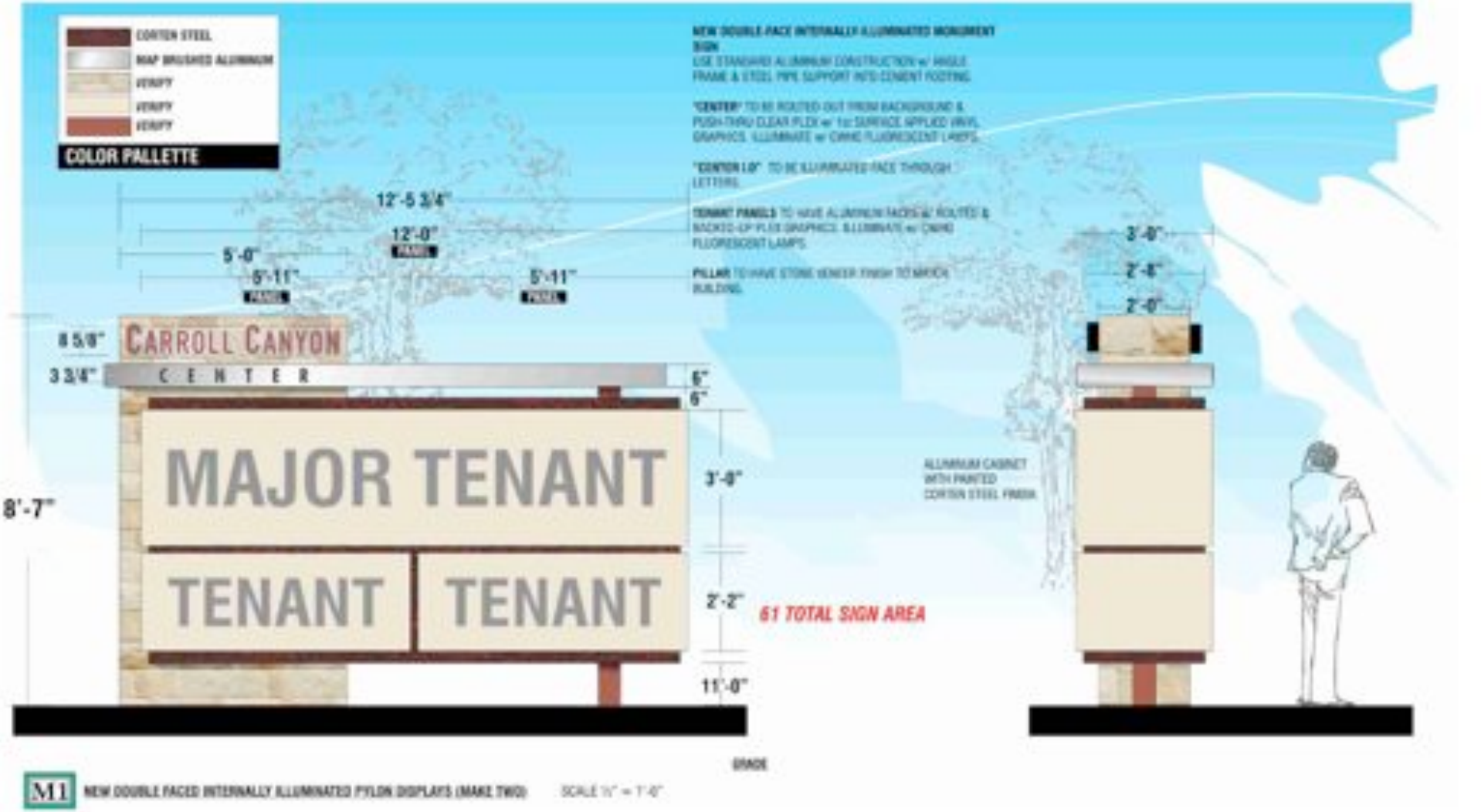


Figure 5.3-4b. ***Carroll Canyon Commercial Center – Sample Major Tenant Signage***

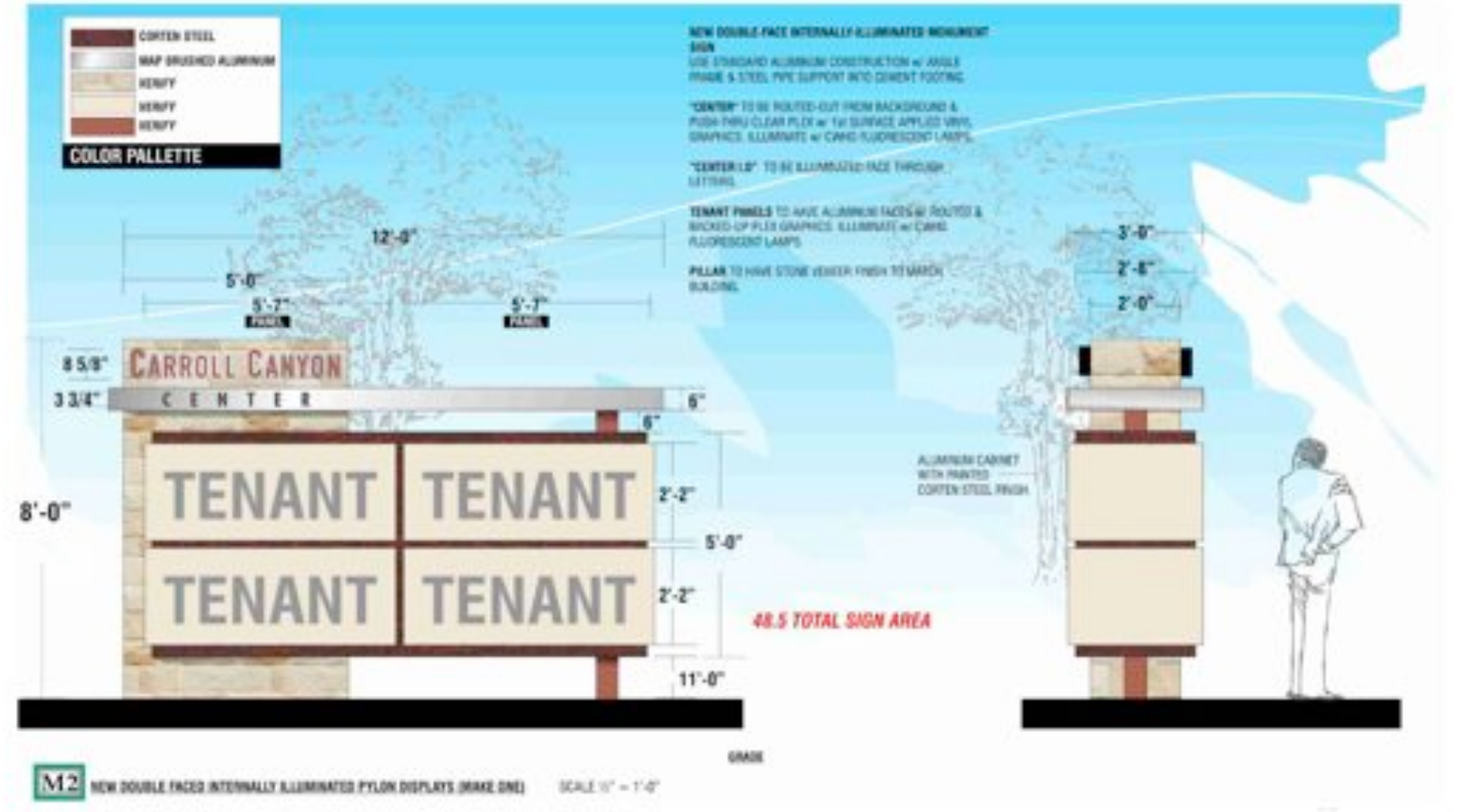


Figure 5.3-4c. ***Carroll Canyon Commercial Center – Sample Tenant Signage***

Project scale is larger than some of the surrounding developments, as the project proposes a maximum structure height of 50 feet. Structures in the immediate area have heights of primarily one- and two-story. Three- and four-story buildings occur in the project area, farther to the north, east and south. Although project heights would not be in excess of 50 feet, the project proposes development of one and two stories. As a result, the project would not result in a significant impact on surrounding development.

Significance of Impacts

The proposed project would not result in significant bulk, scale, materials, or style impacts.

Mitigation Measures

The project would not result in significant impacts related to bulk, scale, materials, and style. No mitigation measures are recommended.

Issue 5

Would the project result in substantial alteration to the existing or planned character of the area, such as could occur with the construction of a subdivision in a previously undeveloped area? (Note: For substantial alteration to occur, new development would have to be of a size, scale, or design that would markedly contrast with the character of the surrounding area.)

Impact Analysis

Relative to size, scale, and design of the project, please refer to *Issue 4*, above.

The existing character of this portion of the community is light industrial/business park and community commercial. Based on Community Plan designations, the planned character for this area is industrial/business park. As discussed above and in Section 5.1, *Land Use*, of this EIR, the industrial nature of this area has been augmented by commercial retail development immediately south of the project site. As a result, the character of the area is characterized as light industrial/business park with community-serving commercial retail uses. Although the project site is not designated as community commercial, this use would fit within the established character of the community.

Significance of Impacts

The proposed project would not result in significant impacts relative to size, scale, or design. The proposed project would not result in significant impacts relative to existing and/or planned character of the area.

Mitigation Measures

The project would not result in significant impacts related to size, scale, or design. The project would not result in significant impacts to existing and/or planned character of the area. No mitigation measures are recommended.

Issue 6

Would there be a loss of any distinctive landmark tree(s), or stand of mature trees as identified in the community plan?

Impact Analysis

The Scripps Miramar Ranch Community Plan does not call out specific stands of trees as identified or landmark trees. The Community Plan repeatedly references the desire to maintain the wooded atmosphere provided by the proliferation of eucalyptus trees.

As stated in *Issue 2*, above, the proposed project would preserve a stand of eucalyptus trees located in the southwest corner of the project site. Additionally, project landscaping incorporates the planting of four varieties of eucalyptus along Carroll Canyon Road and the project's eastern boundary. The selected varieties are more resistant to disease and less susceptible to breaking limbs. Although the project would remove existing eucalyptus along Carroll Canyon Road, the project's proposed landscape plan provides for eucalyptus trees along Carroll Canyon Road and in the eastern project boundary. The species of eucalyptus proposed for the project are healthier varieties and would add to the forested nature of the Scripps Miramar Ranch community. The project's impact on distinctive trees would not be significant.

Significance of Impacts

The proposed project would not result in significant impacts to distinctive trees on-site.

Mitigation Measures

The project would not result in significant impacts related to distinctive trees. No mitigation measures are recommended.

Issue 7

Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

Impact Analysis

The project site is currently fully developed. Current development includes two office buildings and surface parking. Current sources of light on-site include the office buildings, parking lighting, and street lighting.

Lighting within the project provides a unifying theme to the entire project site. Light fixtures would be of matching and/or complementary design. Landscaping and architectural features would be illuminated and accented with lighting. Parking structure and lot lighting shall match the site lighting theme. Additional lighting would be provided in pedestrian and parking areas to provide necessary security. Building-mounted flood lighting shall not be used to illuminate parking areas.

Project lighting has potential to affect nighttime views, while construction may result in glare. Lighting impacts will be regulated by compliance with Section 142.0740 of the City of San Diego Land Development Code. Glare impacts will be regulated by compliance with Section 142.0730 of the City of San Diego Land Development Code.

Significance of Impacts

The proposed project would not result in significant lighting and glare impacts.

Mitigation Measures

The project would not result in significant impacts related to lighting and glare. No mitigation measures are recommended.

5.4 AIR QUALITY

This section of the EIR is based on the *Air Quality Technical Report* prepared for the proposed project by Scientific Resources Associated, dated April 12, 2013. A copy of the *Air Quality Technical Report* is included as Appendix C to this EIR.

5.4.1 Existing Conditions

The Carroll Canyon Commercial Center project site is characterized by existing office development and associated surface parking and landscaping. The existing office buildings encompass 76,241 square feet.

Climate and Meteorology

The project site is located in the San Diego Air Basin (SDAB). The climate of the SDAB is dominated by a semi-permanent high-pressure cell located over the Pacific Ocean. This cell influences the direction of prevailing winds (westerly to northwesterly) and maintains clear skies for much of the year. Figure 5.4-1, *Wind Rose – MCAS Miramar*, provides a graphic representation of the prevailing winds in the project vicinity, as measured at MCAS Miramar, which is the closest meteorological monitoring station to the site, and provides general wind trends in San Diego County.

The high-pressure cell creates two types of temperature inversions that may act to degrade local air quality. Subsidence inversions occur during the warmer months as descending air associated with the Pacific high pressure cell comes into contact with cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. The other type of inversion, a radiation inversion, develops on winter nights when air near the ground cools by heat radiation and air aloft remains warm. The shallow inversion layer formed between these two air masses also can trap pollutants. As the pollutants become more concentrated in the atmosphere, photochemical reactions occur that produce ozone, commonly known as smog.

Background Air Quality

The Air Pollution Control District (APCD) operates a network of ambient air monitoring stations throughout San Diego County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS). The nearest ambient monitoring station to the project site is the Kearny Mesa monitoring station, which measures ozone, nitrogen dioxide, respirable particulate matter (less than or equal to ten microns in diameter), and fine particulate matter (less than or equal to 2.5 microns in diameter). The nearest monitoring station that measures carbon monoxide and sulfur dioxide in San Diego County is located in downtown San Diego. Ambient concentrations of pollutants over the last five years are presented in Table 5.4-1, *Ambient Background Concentrations*.

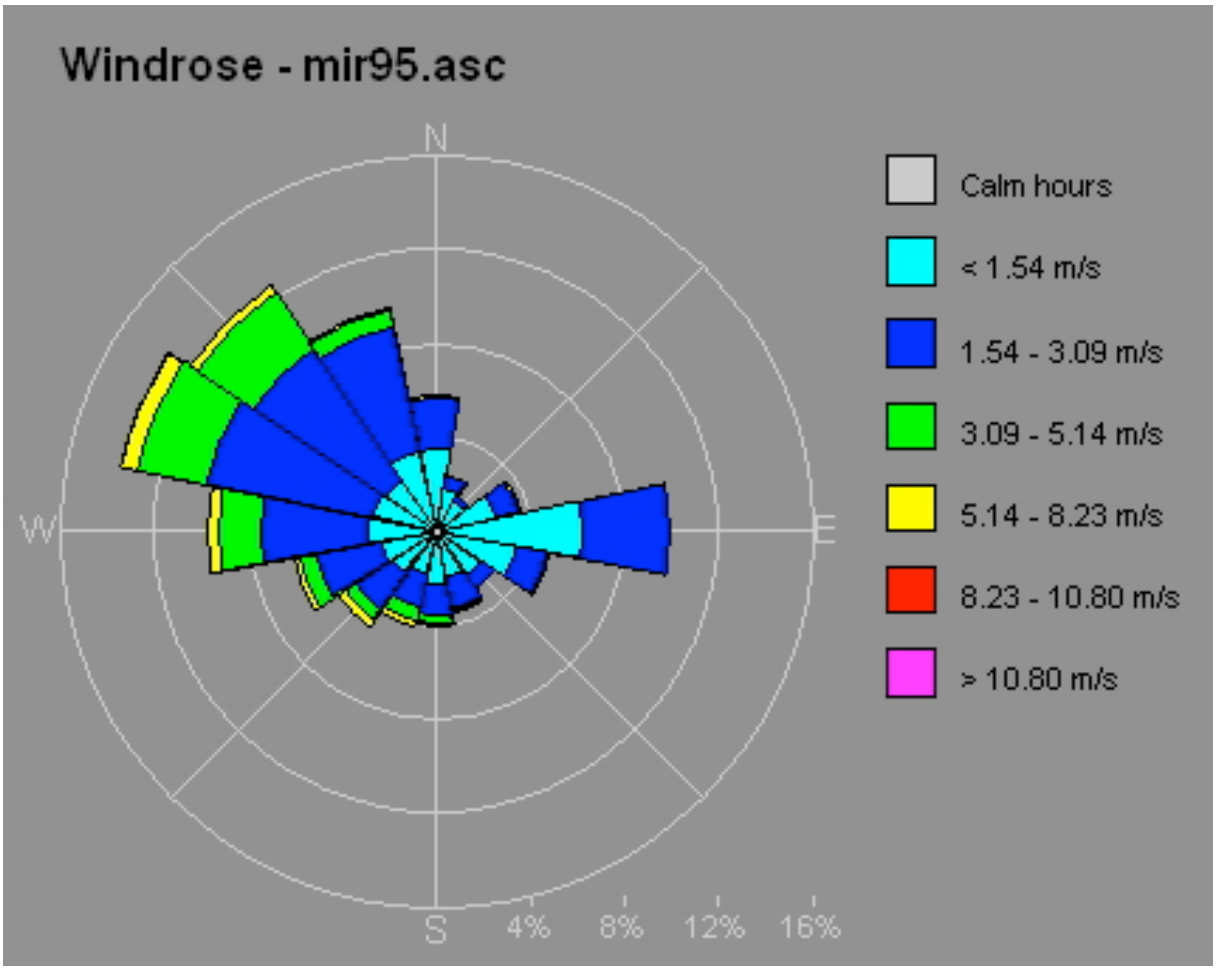


Figure 5.4-1. *Wind Rose – MCAS Miramar*

Table 5.4-1. *Ambient Background Concentrations*
(ppm unless otherwise indicated)

Pollutant	*Averaging Time*	*2009*	*2010*	*2011*	*CAAQS*	*NAAQS*	*Monitoring Station*
Ozone	8 hour	0.082	0.073	0.086	0.070	0.075	Kearny Mesa
	1 hour	0.105	0.100	0.097	0.09	--	Kearny Mesa
PM_{10}	Annual	24.7	18.6	20.2	20 µg/m³	--	Kearny Mesa
	24 hour	50	32	47	50 µg/m³	150 µg/m³	Kearny Mesa
$PM_{2.5}$	Annual	10.5	8.7	8.9	12 µg/m³	15 µg/m³	Kearny Mesa
	24 hour	25.1	18.7	29.9	--	35 µg/m³	Kearny Mesa
NO_2	Annual	0.014	0.013	0.012	0.030	0.053	Kearny Mesa
	1 hour	0.060	0.073	0.073	0.18	0.100	Kearny Mesa
CO	8 hour	2.77	2.17	2.44	9.0	9	San Diego
SO_2	24 hour	0.006	0.002	0.003	0.04	--	San Diego

The Kearny Mesa monitoring station measured exceedances of the State 1-hour ozone standard and the State and Federal 8-hour ozone standards in the period from 2009 through 2011. The NAAQS was exceeded once in 2009 and once in 2011; the 8-hour CAAQS was exceeded three times each

year. The annual CAAQS for PM_{10} was exceeded in 2009 and 2011. The data from the monitoring station indicates that air quality is in attainment of all other air quality standards.

Regulatory Setting

Federal

Air quality is defined by ambient air concentrations of specific pollutants identified by the United States Environmental Protection Agency (EPA) to be of concern with respect to health and welfare of the general public. The EPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the EPA to establish NAAQS, which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the EPA established both primary and secondary standards for seven pollutants (called "criteria" pollutants). The seven pollutants regulated under the NAAQS are as follows: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), respirable particulate matter (or particulate matter with an aerodynamic diameter of 10 microns or less, PM_{10}), fine particulate matter (or particulate matter with an aerodynamic diameter of 2.5 microns or less, $PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. Areas that do not meet the NAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant. The SDAB has been designated as a moderate O_3 nonattainment area for the 8-hour O_3 standard. The SDAB is in attainment for the NAAQS for all other criteria pollutants.

In September 1997, the EPA promulgated 8-hour O_3 and 24-hour and annual $PM_{2.5}$ national standards. As a result, this action has initiated a new planning process to monitor and evaluate emission control measures for these pollutants. On April 15, 2004, the SDAB was designated a basic nonattainment area for the 8-hour NAAQS for O_3. In 2009, the EPA was challenged on its justification for "basic" designations. The EPA subsequently released proposed redesignation classifications for all areas that were classified as "basic" nonattainment. The SDAB would be redesignated as a moderate O_3 nonattainment area under the revised classifications. The SDAB is in attainment for the NAAQS for all other criteria pollutants.

The following specific descriptions of health effects for each of the criteria air pollutants associated with project construction and operations are based on EPA and the California Air Resources Board (ARB).

Ozone. O_3 is considered a photochemical oxidant, which is a chemical that is formed when reactive organic gases (ROG) and oxides of nitrogen (NOx), both by-products of combustion, react in the presence of ultraviolet light. O_3 is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to O_3.

Carbon Monoxide. CO is a product of combustion, and the main source of CO in the SDAB is from motor vehicle exhaust. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease, and can also

affect mental alertness and vision.

Nitrogen Dioxide. NO_2 is also a by-product of fuel combustion, and is formed both directly as a product of combustion and indirectly in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

Respirable Particulate Matter and Fine Particulate Matter. Respirable particulate matter, or PM_{10}, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Fine particulate matter, or $PM_{2.5}$, refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in this size range has been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} and $PM_{2.5}$ arise from a variety of sources, including road dust, diesel exhaust, combustion, tire and brake wear, construction operations, and windblown dust. PM_{10} and $PM_{2.5}$ can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. $PM_{2.5}$ is considered to have the potential to lodge deeper in the lungs.

Sulfur dioxide. SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil, and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Pb in the atmosphere occurs as particulate matter. Pb has historically been emitted from vehicles combusting leaded gasoline, as well as from industrial sources. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Pb has the potential to cause gastrointestinal, central nervous system, kidney, and blood diseases upon prolonged exposure. Pb is also classified as a probable human carcinogen.

State

California Clean Air Act. The California Clean Air Act was signed into law on September 30, 1988, and became effective on January 1, 1989. The Act requires that local air districts implement regulations to reduce emissions from mobile sources through the adoption and enforcement of transportation control measures. The California Clean Air Act required the SDAB to achieve a five percent annual reduction in ozone precursor emissions from 1987 until the standards are attained. If this reduction cannot be achieved, all feasible control measures must be implemented. Furthermore, the California Clean Air Act required local air districts to implement a Best Available Control Technology rule and to require emission offsets for nonattainment pollutants.

The ARB is the State regulatory agency with authority to enforce regulations to both achieve and maintain air quality in California. The ARB is responsible for the development, adoption, and enforcement of the State's motor vehicle emissions program, as well as the adoption of the CAAQS. The ARB also reviews operations and programs of the local air districts, and requires each air district with jurisdiction over a nonattainment area to develop its own strategy for achieving the NAAQS and CAAQS. The CAA allows states to adopt ambient air quality standards and other regulations

provided they are at least as stringent as Federal standards. The ARB has established the more stringent CAAQS for the six criteria pollutants through the California Clean Air Act of 1988, and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The SDAB is currently classified as a nonattainment area under the CAAQS for O_3, PM_{10}, and $PM_{2.5}$. It should be noted that the ARB does not differentiate between attainment of the 1-hour and 8-hour CAAQS for O_3; therefore, if an air basin records exceedances of either standard the area is considered a nonattainment area for the CAAQS for O_3. The SDAB has recorded exceedances of both the 1-hour and 8-hour CAAQS for O_3. The following specific descriptions of health effects for the additional California criteria air pollutants are based on the ARB.

Sulfates. Sulfates are the fully oxidized ionic form of sulfur. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO_2) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The ARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and due to fact that they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide. H_2S is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation. Breathing H_2S at levels above the standard would result in exposure to a very disagreeable odor. In 1984, an ARB committee concluded that the ambient standard for H_2S is adequate to protect public health and to significantly reduce odor annoyance.

Vinyl Chloride. Vinyl chloride, a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure to vinyl chloride through inhalation and oral exposure causes liver damage. Cancer is a major concern from exposure to vinyl chloride via inhalation. Vinyl chloride exposure has been shown to increase the risk of angiosarcoma, a rare form of liver cancer, in humans.

Visibility Reducing Particles. Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that are comprised of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. The CAAQS is intended to limit the frequency and severity of visibility impairment due to regional haze. A separate standard for visibility-reducing particles that is applicable only in the Lake Tahoe Air Basin is based on reduction in scenic quality.

Table 5.4-2, *Ambient Air Quality Standards*, presents a summary of the ambient air quality standards adopted by the Federal and California Clean Air Acts.

Table 5.4-2. *Ambient Air Quality Standards*

POLLUTANT	AVERAGE TIME	CALIFORNIA STANDARDS		NATIONAL STANDARDS		
		Concentration	Method	Primary	Secondary	Method
Ozone (O_3)	1 hour	0.09 ppm (176 µg/m³)	Ultraviolet Photometry	--	--	Ethylene Chemiluminescence
	8 hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)	0.075 ppm (147 µg/m³)	
Carbon Monoxide (CO)	8 hours	9.0 ppm (10 mg/m³)	Non-Dispersive Infrared Spectroscopy (NDIR)	9 ppm (10 mg/m³)	--	Non-Dispersive Infrared Spectroscopy (NDIR)
	1 hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm (56 µg/m³)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m³)	--	Gas Phase Chemiluminescence
	1 hour	0.18 ppm (338 µg/m³)		0.100 ppm (188 µg/m³)	--	
Sulfur Dioxide (SO_2)	24 hours	0.04 ppm (105 µg/m³)	Ultraviolet Fluorescence	--	--	Pararosaniline
	3 hours	--		--	0.5 ppm (1300 µg/m³)	
	1 hour	0.25 ppm (655 µg/m³)		0.075 ppm (196 µg/m³)	--	
Respirable Particulate Matter (PM_{10})	24 hours	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	150 µg/m³	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		--	--	
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12 µg/m³	15 µg/m³	Inertial Separation and Gravimetric Analysis
	24 hours	--		35 µg/m³	--	
Sulfates	24 hours	25 µg/m³	Ion Chromatography	--	--	--
Lead	30-day Average	1.5 µg/m³	Atomic Absorption	--	--	Atomic Absorption
	Calendar Quarter	--		1.5 µg/m³	1.5 µg/m³	
	3-Month Rolling Average	--		0.15 µg/m³	0.15 µg/m³	
Hydrogen Sulfide	1 hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence	--	--	--
Vinyl Chloride	24 hours	0.010 ppm (26 µg/m³)	Gas Chromatography	--	--	--

ppm= parts per million; µg/m³ = micrograms per cubic meter ; mg/m³= milligrams per cubic meter
Source: California Air Resources Board, www.arb.ca.gov, 2012, http://www.arb.ca.gov/research/aaqs/aaqs2.pdf

Toxic Air Contaminants. In 1983, the California Legislature enacted a program to identify the health effects of Toxic Air Contaminants (TACs) and to reduce exposure to these contaminants to protect the public health (Assembly Bill 1807: Health and Safety Code sections 39650-39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

The State of California has identified diesel particulate matter as a TAC. Diesel particulate matter is emitted from on- and off-road vehicles that utilize diesel as fuel. Following identification of diesel particulate matter as a TAC in 1998, the ARB has worked on developing strategies and regulations aimed at reducing the emissions and associated risk from diesel particulate matter. The overall strategy for achieving these reductions is found in the *Risk Reduction Plan to Reduce Particulate Matter from Diesel-Fueled Engines and Vehicles* (State of California 2000). A stated goal of the plan is to reduce the cancer risk statewide arising from exposure to diesel particulate matter by 75 percent by 2010 and by 85 percent by 2020. The *Risk Reduction Plan* contains the following three components:

- New regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce diesel particulate matter emissions by about 90 percent overall from current levels;
- New retrofit requirements for existing on-road, off-road, and stationary diesel-fueled engines and vehicles where determined to be technically feasible and cost-effective; and
- New Phase 2 diesel fuel regulations to reduce the sulfur content levels of diesel fuel to no more than 15 ppm to provide the quality of diesel fuel needed by the advanced diesel particulate matter emission controls.

A number of programs and strategies to reduce diesel particulate matter are in place or are in the process of being developed as part of the ARB's Diesel Risk Reduction Program. Some of these programs and strategies include those that would apply to construction and operation of the Carroll Canyon Commercial Center project, including the following:

- In 2001, the ARB adopted new particulate matter and NOx emission standards to clean up large diesel engines that power big-rig trucks, trash trucks, delivery vans, and other large vehicles. The new standard for particulate matter takes effect in 2007 and reduces emissions to 0.01 gram of particulate matter per brake horsepower-hour (g/bhp-hr.) This is a 90 percent reduction from the existing particulate matter standard. New engines will meet the 0.01 g/bhp-hr particulate matter standard with the aid of diesel particulate filters that trap the particulate matter before exhaust leaves the vehicle.
- ARB has worked closely with the United States EPA on developing new particulate matter and NOx standards for engines used in off-road equipment such as backhoes, graders, and farm equipment. U.S. EPA has proposed new standards that would reduce the emission from off-road engines to similar levels to the on-road engines discussed above by 2010 to 2012. These new engine standards were adopted as part of the Clean Air Nonroad Diesel Final Rule in 2004. Once approved by U.S. EPA, ARB will adopt these as the applicable State standards for new off-road engines. These standards will reduce diesel particulate matter emission by over 90 percent from new off-road engines currently sold in California.

- The ARB has adopted several regulations that will reduce diesel emissions from in-use vehicles and engines throughout California. In some cases, the particulate matter reduction strategies also reduce smog-forming emissions such as NOx.

As an ongoing process, the ARB reviews air contaminants and identifies those that are classified as TACs. The ARB also continues to establish new programs and regulations for the control of TACs, including diesel particulate matter, as appropriate.

The local APCD has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations. The San Diego APCD is the local agency responsible for the administration and enforcement of air quality regulations in San Diego County.

The APCD and SANDAG are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The San Diego County Regional Air Quality Strategy (RAQS) was initially adopted in 1991, and is updated on a triennial basis. The RAQS was updated in 1995, 1998, 2001, 2004, and most recently in 2009. The RAQS outlines APCD's plans and control measures designed to attain the state air quality standards for O_3. The RAQS does not address the State air quality standards for PM_{10} or $PM_{2.5}$.

The APCD has also developed the air basin's input to the State Implementation Plan (SIP), which is required under the Federal Clean Air Act for areas that are out of attainment of air quality standards. The SIP includes the APCD's plans and control measures for attaining the O_3 NAAQS. The SIP is also updated on a triennial basis. The latest SIP update was submitted by the ARB to the EPA in 1998, and the APCD is in the process of updating its SIP to reflect the new 8-hour O_3 NAAQS. To that end, the APCD has developed its *Eight-Hour Ozone Attainment Plan for San Diego County* (hereinafter referred to as the Attainment Plan). The Attainment Plan forms the basis for the SIP update, as it contains documentation on emission inventories and trends, the APCD's emission control strategy, and an attainment demonstration that shows that the SDAB will meet the NAAQS for O_3. Emission inventories, projections, and trends in the Attainment Plan are based on the latest O_3 SIP planning emission projections compiled and maintained by ARB. Supporting data were developed jointly by stakeholder agencies, including ARB, the APCD, the South Coast Air Quality Management District (SCAQMD), the Southern California Association of Governments (SCAG), and SANDAG. Each agency plays a role in collecting and reviewing data as necessary to generate comprehensive emission inventories. The supporting data include socio-economic projections, industrial and travel activity levels, emission factors, and emission speciation profiles. These projections are based on data submitted by stakeholder agencies including projections in municipal General Plans.

The ARB compiles annual statewide emission inventories in its emission-related information database, the California Emission Inventory Development and Reporting System (CEIDARS). Emission projections for past and future years were generated using the California Emission Forecasting System (CEFS), developed by ARB to project emission trends and track progress towards meeting emission reduction goals and mandates. CEFS utilizes the most current growth and emissions control data available and agreed upon by the stakeholder agencies to provide

comprehensive projections of anthropogenic (human activity-related) emissions for any year from 1975 through 2030. Local air districts are responsible for compiling emissions data for all point sources and many stationary area-wide sources. For mobile sources, CEFS integrates emission estimates from ARB's EMFAC2007 and OFFROAD models. SCAG and SANDAG incorporate data regarding highway and transit projects into their Travel Demand Models for estimating and projecting vehicle miles traveled (VMT) and speed. The ARB's on-road emissions inventory in EMFAC2007 relies on these VMT and speed estimates. To complete the inventory, estimates of biogenic (naturally occurring) emissions are developed by ARB using the Biogenic Emissions Inventory Geographic Information System (BEIGIS) model.

Because the ARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends as well as land use plans developed by the cities and by the County as part of the development of general plans, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the RAQS and the Attainment Plan. In the event that a project would propose development which is less dense than anticipated within the general plan, the project would likewise be consistent with the RAQS and the Attainment Plan. If a project proposes development that is greater than that anticipated in the general plan and SANDAG's growth projections, the project might be in conflict with the RAQS and SIP, and might have a potentially significant impact on air quality.

Local

In San Diego County, the SDAPCD is the regulatory agency that is responsible for maintaining air quality, including implementation and enforcement of State and Federal regulations. The project site is located in the City of San Diego. The City of San Diego has not adopted specific regulations to govern air quality. The Conservation Element of the City's General Plan (City of San Diego 2008) includes policies that encourage development in a manner that benefits San Diego's environment and economy. These policies encourage green building practices and sustainable development. The policies also promote infill development, which reduces emissions from vehicles. The City of San Diego's *Significance Determination Thresholds* (City of San Diego 2011) that are based on Appendix G of the State CEQA Guidelines.

5.4.2 Impact Analysis

Thresholds of Significance

The Carroll Canyon Commercial Center project would result in both construction and operational impacts. Construction impacts include emissions associated with the construction of the project. Operational impacts include emissions associated with the project, including traffic, at full buildout.

The City of San Diego has adopted its *Significance Determination Thresholds* (City of San Diego 2011) that are based on Appendix G of the State CEQA Guidelines. According to the Significance Determination Thresholds, a project would have a significant environmental impact if the project would result in:

- A conflict with or obstruct the implementation of the applicable air quality plan;
- A violation of any air quality standard or contribute substantially to an existing or projected air quality violation;

- Exposing sensitive receptors to substantial pollutant concentrations;
- Construction activities that exceed 100 pounds per day of Particulate Matter (dust);
- A cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors); or
- Creating objectionable odors affecting a substantial number of people.

In their *Significance Determination Thresholds*, the City of San Diego has adopted emission thresholds based on the thresholds for an Air Quality Impact Assessment in the San Diego Air Pollution Control District's Rule 20.2. These thresholds are shown in Table 5.4-3, *Significance Criteria for Air Quality Impacts*.

Table 5.4-3. *Significance Criteria for Air Quality Impacts*

Pollutant	*Emission Rate*		
	Lbs/Hr	Lbs/Day	Tons/Year
Carbon Monoxide (CO)	100	550	100
Oxides of Nitrogen (NOx)	25	250	40
Respirable Particulate Matter (PM_{10})	--	100	15
Oxides of Sulfur (SOx)	25	250	40
Lead and Lead Compounds	--	3.2	0.6
Fine Particulate Matter ($PM_{2.5}$)	--	--	--
Volatile Organic Compounds (VOCs)	--	137	15

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the State and Federal government as TACs or Hazardous Air Pollutants (HAPs). If a project has the potential to result in emissions of any TAC or HAP that may expose sensitive receptors to substantial pollutant concentrations, the project would be deemed to have a potentially significant impact. With regard to evaluating whether a project would have a significant impact on sensitive receptors, air quality regulators typically define sensitive receptors as schools (Preschool to 12th Grade), hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality.

With regard to odor impacts, a project that proposes a use that would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of offsite receptors.

The impacts associated with construction and operation of the Carroll Canyon Commercial Center project were evaluated for significance based on these significance criteria.

Issue 1

Would the project conflict with or obstruct implementation of the applicable air quality plan?

Impact Analysis

As discussed in above, the SIP is the document that sets forth the State's strategies for attaining and maintaining the NAAQS. The APCD is responsible for developing the San Diego portion of the SIP, and has developed an attainment plan for attaining the 8-hour NAAQS for O_3. The RAQS sets forth the plans and programs designed to meet the State air quality standards. Through the RAQS

and SIP planning processes, the APCD adopts rules, regulations, and programs designed to achieve attainment of the ambient air quality standards and maintain air quality in the SDAB.

Conformance with the RAQS and SIP determines whether a project will conflict with or obstruct implementation of the applicable air quality plans. The basis for the RAQS and SIP is the distribution of population in the San Diego region as projected by SANDAG. Growth forecasting is based in part on the land uses established by the City of San Diego General Plan.

The RAQS and SIP address air emissions and impacts from industrial sources, area-wide sources, and mobile sources. The programs also consider transportation control measures and indirect source review. Industrial sources are typically stationary air pollution sources that are subject to APCD rules and regulations, and over which the APCD has regulatory authority. Area-wide sources include sources such as consumer products use, small utility engines, hot water heaters, and furnaces. Both the ARB and the APCD have authority to regulate these sources and have developed plans and programs to reduce emissions from certain types of area-wide sources. Mobile sources are principally emissions from motor vehicles. The ARB establishes emission standards for motor vehicles and establishes regulations for other mobile source activities including off-road vehicles.

Both the RAQS and SIP address emissions of ozone precursors (ROG and NOx), as the SDAB is classified as a basic nonattainment area for the NAAQS and a nonattainment area for the CAAQS. The RAQS and SIP do not address particulate matter. The California CAA requires an air quality strategy to achieve a five percent average annual ozone precursor emission reduction when implemented or, if that is not achievable, an expeditious schedule for adopting every feasible emission control measure under air district purview [California Health and Safety Code (H&SC) Section 40914]. The current RAQS represents an expeditious schedule for adopting feasible control measures, since neither San Diego nor any air district in the State has demonstrated sustained five percent average annual ozone precursor reductions.

Most of the control measures adopted in the RAQS apply to industrial sources and specific source categories. There are no specific rules and regulations that apply to construction or operational sources associated with the Carroll Canyon Commercial Center project; however, off-road equipment and on-road vehicles involved in construction would be required to comply with ARB emission standards.

In 1992, SANDAG adopted Transportation Control Measures for the Air Quality Plan which set forth 11 tactics aimed at reducing traffic congestion and motor vehicle emissions within the SDAB. For each of these tactics, the Transportation Control Measures evaluated the potential emissions reductions on a region-wide basis. The tactics include the following:

- Commute travel reduction program
- High school, college, and university travel reduction program
- Goods movement/truck operation program
- Non-commute travel reduction program
- Transit improvements and expansion

- Vanpool program
- High occupancy vehicle lanes
- Park and ride facilities
- Bicycle facilities
- Traffic flow improvements
- Indirect source control program

The tactic that is most applicable to the proposed project is the indirect source control program. The Transportation Control Measures adopted by SANDAG identified job-housing balance, mixed-use, and transit corridor development as criteria for indirect source control. As part of job-housing balance, SANDAG indicated that land use policies and programs shall be established to attract appropriate employers to residential areas and to encourage appropriate housing in and near industrial and business areas. Mixed-use development should be designed to maximize walking and minimize vehicle use by providing housing, employment, education, shopping, recreation, and any support facilities within convenient proximity.

The Carroll Canyon Commercial Center project meets the criteria of the RAQS, SIP, and SANDAG's Transportation Control Measures, as it provides commercial uses and employment in an area surrounded by residential uses. The project is located within a short distance to residential uses in the surrounding area. The project would, therefore, provide the area with retail uses.

The RAQS and SIP include emissions budgets for the San Diego Air Basin in their projections of whether or not the air basin will attain and maintain the ozone standard. Emissions budgets for NOx and ROG within the San Diego Air Basin include stationary sources, mobile sources, and area sources. Because the project would generate construction emissions, on-road mobile source emissions, and the area sounce emissions from electricity use, consumer products use, and architectual coatings use, the emissions from the CalEEMod Model were compared with those emissions sources.

Table 5.4-4, *Comparison of Project Emissions with RAQS and SIP Emissions Budgets*, presents a summary of the air basin's emissions, along with a summary of the emissions assocaited with the Carroll Canyon Commercial Center project. As shown in Table 5.4-4, the emissions associated with the proejct would comprise a very small percentage (less than 0.2 percent for construction and less than 0.05 percent for operations) of all the emission categories. Furthermore, the project's emissions for all sources are below the City of San Diego's significance thresholds. Because emissions are a very small percentage of the air basin's emissions, and because the emssions are less than the significance thresholds, the emissions attributable to the project would not obstruct or conflict with implementation of the RAQS or SIP. Accordingly the proposed project is consistent with the applicable air quality plans, and would not result in a significant impact.

Table 5.4-4. *Comparison of Project Emissions with RAQS and SIP Emissions Budgets*

Emission Source	VOCs	NOx	CO	SO_x	PM_{10}	$PM_{2.5}$
Construction, lbs/day						
Construction Fugitive Dust	-	-	-	-	2.44	1.29
Emissions Budget	-	-	-	-	57,080	5,700
Percent of Emissions Budget	-	-	-	-	0.0043%	0.0226%
Paved Road Dust	-	-	-	-	9.34	1.29
Emissions Budget	-	-	-	-	83,300	12,500
Percent of Emissions Budget	-	-	-	-	0.0112%	0.0103%
Off Road Diesel	10.82	69.52	46.07	0.07	5.26	5.26
Emissions Budget	24,860	52,240	257,860	80	3,160	2,800
Percent of Emissions Budget	0.0435%	0.1331%	0.0179%	0.0875%	0.1665%	0.1879%
Vehicle Emissions	0.82	5.35	7.43	0.01	0.19	0.17
Emissions Budget	68,780	127,180	654,880	1,000	10,820	7,540
Percent of Emissions Budget	0.0012%	0.0042%	0.0011%	0.0010%	0.0018%	0.0023%
Operations, lbs/day						
Architectural Coatings Use	0.41	-	-	-	-	-
Emissions Budget	18,860	-	-	-	-	-
Percent of Emissions Budget	0.0022%					
Consumer Products Use	3.10	-	-	-	-	-
Emissions Budget	42,400	-	-	-	-	-
Percent of Emissions Budget	0.0073%	-	-	-	-	-
Energy Use	0.01	0.09	0.07	0.00	0.01	0.01
Emissions Budget	4,500	9,800	12,080	260	2,640	2,360
Percent of Emissions Budget	0.0002%	0.0009%	0.0006%	0.0000%	0.0004%	0.0004%
Paved Road Dust	-	-	-	-	10.86	0.57
Emissions Budget	-	-	-	-	83,300	12,500
Percent of Emissions Budget	-	-	-	-	0.0130%	0.0046%
Vehicle Emissions	31.56	61.00	278.52	0.38	2.30	2.04
Emissions Budget	68,780	127,180	654,880	1,000	10,820	7,540
Percent of Emissions Budget	0.0459%	0.0480%	0.0425%	0.0380%	0.0213%	0.0271%

Significance of Impacts

The applicable air quality control plans include the RAQS, the SIP, and SANDAG's Transportation Control Measures. The proposed project is consistent with these air quality plans. No impact would result.

Mitigation Measures

No significant impacts to the applicable air quality plans would result. No mitigation is required.

Issue 2

Would the project cause a violation of any air quality standard or contribute substantially to an exiting or projected air quality violation?

Impact Analysis

To address this significance threshold, an evaluation of emissions associated with both the construction and operational phases of the project was conducted. A discussion of the impacts relative to construction is included below, under *Air Quality Issue 4*. The discussion that follows addresses the project's operational impacts. Operational impacts associated with the Carroll Canyon Commercial Center project would include impacts associated with vehicular traffic, as well as area sources such as energy use, landscaping, consumer products use, and architectural coatings use for maintenance purposes.

The *Carroll Canyon Commercial Center Draft Traffic Impact Analysis* (LOS Engineering 2012) calculated project trip generation rates based on the proposed development. According to the Traffic Impact Analysis, the project would generate 7,095 net cumulative ADT. The trip generation rates were accounted for within the CalEEMod Model runs for vehicular emissions.

Operational impacts associated with vehicular traffic and area sources including energy use, landscaping, consumer products use, hearth emissions, and architectural coatings use for maintenance purposes were estimated using the CalEEMod Model. The CalEEMod Model calculates vehicle emissions based on emission factors from the EMFAC2007 model. It was assumed that the first year of full occupancy would be 2014. Based on the results of the EMFAC2007 model for subsequent years, emissions would decrease on an annual basis from 2014 onward due to phase-out of higher polluting vehicles and implementation of more stringent emission standards that are taken into account in the EMFAC2007 model. Table 5.4-5, *Operational Emissions*, presents the results of the emission calculations, in lbs/day, along with a comparison with the significance criteria.

Table 5.4-5. *Operational Emissions*

	ROG	NOx	CO	SO_x	PM_{10}	$PM_{2.5}$
Summer Day, lbs/day						
Area Sources	3.51	--	--	--	--	--
Energy Use	0.01	0.09	0.07	0.00	0.01	0.01
Vehicular Emissions	29.84	58.25	273.82	0.38	13.16	2.61
TOTAL	**33.87**	**58.34**	**273.89**	**0.38**	**13.17**	**2.62**
Significance Screening Criteria	137	250	550	250	100	55
Above Screening Criteria?	*No*	*No*	*No*	*No*	*No*	*No*
Winter Day, lbs/day						
Area Sources	3.51	-	--	--	--	--
Energy Use	0.01	0.09	0.07	0.00	0.01	0.01
Vehicular Emissions	31.56	61.00	278.52	0.36	13.19	2.64
TOTAL	**35.58**	**61.09**	**278.59**	**0.36**	**13.2**	**2.65**
Significance Screening Criteria	137	250	550	250	100	55
Above Screening Criteria?	*No*	*No*	*No*	*No*	*No*	*No*

Based on the estimates of the emissions associated with project operations, the emissions of all criteria pollutants are below the significance thresholds.

Projects involving traffic impacts may result in the formation of locally high concentrations of CO, known as CO "hot spots." To verify that the project would not cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO "hot spots" was conducted. The Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol (Caltrans 1998) were followed to determine whether a CO "hot spot" is likely to form due to project- generated traffic. In accordance with the Protocol, CO "hot spots" are typically evaluated when (a) the LOS of an intersection or roadway decreases to a LOS E or worse; (b) signalization and/or channelization is added to an intersection; and (c) sensitive receptors such as residences, commercial developments, schools, hospitals, etc. are located in the vicinity of the affected intersection or roadway segment.

The Traffic Impact Analysis evaluated whether or not there would be a decrease in the level of service at the intersections affected by the Project. No intersection impacts were predicted for Existing plus Project or Near Term plus Project conditions. The Traffic Impact Analysis identified significant impacts for the 2035 plus Project condition at the following three intersections:

- Carroll Canyon Road at Black Mountain Road
- Carroll Canyon Road at I-15 Southbound Ramps
- Carroll Canyon Road at I-15 Northbound Ramps

As recommended in the Protocol, CALINE4 modeling was conducted for the intersections identified above for the scenario without project traffic, and the project scenarios. Modeling was conducted based on the guidance in Appendix B of the Protocol to calculate maximum predicted 1-hour CO concentrations. Predicted 1-hour CO concentrations were then scaled to evaluate maximum predicted 8-hour CO concentrations using the recommended scaling factor of 0.7 for urban locations.

Inputs to the CALINE4 model were obtained from the Traffic Impact Analysis. As recommended in the Protocol, receptors were located at locations that were approximately three meters from the mixing zone, and at a height of 1.8 meters. Average approach and departure speeds were assumed to be five mph to account for congestion at the intersection and provide a worst-case estimate of emissions. Emission factors for those speeds were estimated from the EMFAC2011 emissions model for 2035.

In accordance with the Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol, it is also necessary to estimate future background CO concentrations in the project vicinity to determine the potential impact plus background and evaluate the potential for CO "hot spots" due to the project. As a conservative estimate of background CO concentrations, the existing maximum 1-hour background concentration of CO that was calculated using the persistence factor of 0.7 with the 8-hour concentration measured at the San Diego monitoring station for the period 2009 to 2011 of 3.96 ppm was used to represent future maximum background 1-hour CO concentrations. The existing maximum 8-hour background concentration of CO that was measured at the San Diego monitoring station during the period from 2009 to 2011 of 2.77 ppm was also used to provide a conservative estimate of the maximum 8-hour background concentrations in the project vicinity. CO concentrations in the future may be lower as inspection and maintenance programs and more stringent emission controls are placed on vehicles.

Table 5.4-6, *CO Hot Spots Evaluation*, presents a summary of the predicted CO concentrations (impact plus background) for the intersections evaluated.

Table 5.4-6. *CO Hot Spots Evaluation*

Intersection	2035 Plus Project Impact	
Maximum 1-hour Concentration Plus Background, ppm CAAQS = 20 ppm; NAAQS = 35 ppm; Background 3.96 ppm		
	am	*pm*
Carroll Canyon Road and Black Mountain Road	4.56	4.56
Carroll Canyon Road and I-15 Southbound Ramps	4.46	4.36
Carroll Canyon Road and I-15 Northbound Ramps	4.36	4.46
Maximum 8-hour Concentration Plus Background, ppm CAAQS = 9.0 ppm; NAAQS = 35 ppm; Background 3.96 ppm		
Carroll Canyon Road and Black Mountain Road	4.19	
Carroll Canyon Road and I-15 Southbound Ramps	4.12	
Carroll Canyon Road and I-15 Northbound Ramps	4.12	

As shown in Table 5.4-5, the predicted CO concentrations would be substantially below the 1-hour and 8-hour NAAQS and CAAQS for CO shown in Table 5.4-2. Therefore, no exceedances of the CO standard are predicted, and the project would not cause or contribute to a violation of this air quality standard.

Significance of Impacts

Operational emissions would be below the significance thresholds for all pollutants. Additionally, CO impacts would be less than significant because no CO "hot spots" would result from the project. Therefore, air quality impacts associated with project operations would not be significant.

Mitigation Measures

Project impacts associated with emissions during project operations are less than significant. No mitigation is required.

Issue 3

Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact Analysis

This threshold concerns whether the project could expose sensitive receptors to substantial pollutant concentrations of TACs. If a project has the potential to result in emissions of any TAC that results in a cancer risk of greater than ten in one million or substantial non-cancer risk, the project would be deemed to have a potentially significant impact.

Air quality regulators typically define sensitive receptors as schools (Preschool through 12th Grade), hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. Residential land uses may also be considered sensitive receptors. The nearest sensitive receptors to the site are the residents located approximately 0.1 mile east of the project site.

Emissions of TACs are attributable to temporary emissions from construction emissions, and minor emissions associated with diesel truck traffic used for deliveries at the site. Truck traffic may result

in emissions of diesel particulate matter, which is characterized by the State of California as a TAC. Certain types of projects are recommended to be evaluated for impacts associated with TACs. In accordance with the SCAQMD's *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (SCAQMD 2003), projects that should be evaluated for diesel particulate emissions include truck stops, distribution centers, warehouses, and transit centers which diesel vehicles would utilize and which would be sources of diesel particulate matter from heavy-duty diesel trucks. A retail development such as the Carroll Canyon Commercial Center project would not attract a disproportionate amount of diesel trucks and would not be considered a source of TAC emissions. Based on the CalEEMod Model, heavy-duty diesel trucks would account for only 0.9 percent of the total trips associated with the project. Impacts to sensitive receptors from TAC emissions would therefore be less than significant.

Significance of Impacts

For the Carroll Canyon Commercial Center project, senstive receptors (characterized by the residential development located 0.1 mile east of the project site) may be exposed to TACs, a pollutant that can be harmful in substantial concentrations. Diesel trucks are the primary producers of TAC emissions. For this project, heavye-duty diesel truck trips would account for 0.9 percents of the total trips associated with the project. As such, impacts to sensitive receptors would be less than significant.

Mitigation Measures

Project impacts to sensitive receptors are less than significant. No mitigation is required.

Issue 4

Would the project exceed 100 pounds per day of Particulate Matter (dust)?

Impact Analysis

Emissions of pollutants such as fugitive dust and heavy equipment exhaust that are generated during construction are generally highest near the construction site. Emissions from the construction of the project were estimated using the CalEEMod Model (ENVIRON 2011). It was assumed that construction would require the following phases: fine grading, utilities installation, building construction, paving, and architectural coatings application.

The CalEEMod Model provides default assumptions regarding horsepower rating, load factors for heavy equipment, and hours of operation per day. Default assumptions within the CalEEMod Model and assumptions for similar projects were used to represent operation of heavy construction equipment.

Construction calculations within the CalEEMod Model utilize the number and type of equipment shown in Table 4.5-4 to calculate emissions from heavy construction equipment. The methodology used involves multiplication of the number of pieces of each type of equipment times the equipment horsepower rating, load factor, and OFFROAD emission factor, as shown in the equation below:

Emissions, lbs/day = (Number of pieces of equipment) x (equipment horsepower) x (load factor) x (hours of operation per day) x (OFFROAD emission factor, lbs/hp-hr)

In addition to calculating emissions from heavy construction equipment, the URBEMIS Model contains calculation modules to estimate emissions of fugitive dust, based on the amount of earthmoving or surface disturbance required; emissions from heavy-duty truck trips or vendor trips during construction activities; emissions from construction worker vehicles during daily commutes; emissions of ROG from paving using asphalt; and emissions of ROG during application of architectural coatings. As part of the project design features, it was assumed that standard dust control measures (watering three times daily, using soil stabilizers on unpaved roads) and architectural coatings that comply with SDAPCD Rule 67.0 [assumed to meet a volatile organic compound (VOC) content of 150 grams per liter (g/l)] would be used during construction.

Table 5.4-7, *Estimated Maximum Daily Construction Emissions*, provides the detailed emission estimates as calculated with the CalEEMod Model for each of the construction phases of the project, without mitigation. As shown in Table 5.4-7, emissions of criteria pollutants during construction would be below the thresholds of significance for all project construction phases for all pollutants. Project criteria pollutant emissions during construction would be temporary. Impacts during construction would be less than significant.

Significance of Impacts

Construction impacts would be temporary and for a short duration. Impacts during construction would be less than significant.

Mitigation Measures

Construction impacts would be less than significant. No mitigation is required.

Table 5.4-7. *Estimated Maximum Daily Construction Emissions*

[1]Maximum occurs either during simultaneous building construction and architectural coatings application, building construction and paving, or mass grading and trenching/utilities.

Construction Activity/Time	ROG	NOx	CO	SO2	PM_{10} Dust	PM_{10} Exhaust	PM_{10} Total	$PM_{2.5}$ Dust	$PM_{2.5}$ Exhaust	$PM_{2.5}$ Total
Site Preparation										
Fugitive Dust	-	-	-	-	0.46	0.00	0.46	0.00	0.00	0.00
Off-Road Diesel	8.86	70.71	42.55	0.07	-	3.50	3.50	-	3.50	3.50
On-Road Diesel	0.28	3.26	1.53	0.00	8.65	0.12	8.77	0.01	0.11	0.12
Worker Trips	0.09	0.10	1.02	0.00	0.20	0.01	0.20	0.00	0.01	0.01
TOTAL	**9.23**	**74.07**	**45.10**	**0.07**	**9.35**	**3.63**	**12.97**	**0.01**	**3.62**	**3.63**
Site Grading										
Fugitive Dust	-	-	-	-	2.44	0.00	2.44	1.29	0.00	1.29
Off-Road Diesel	6.36	48.81	31.00	0.05		2.73	2.73		2.73	2.73
Worker Trips	0.09	0.10	1.02	0.00	0.20	0.01	0.21	0.00	0.01	0.01
TOTAL	**6.45**	**48.91**	**32.02**	**0.05**	**2.64**	**2.74**	**5.37**	**1.29**	**2.74**	**4.03**
Building Construction										
Building Off Road Diesel	5.17	34.66	23.45	0.04	-	2.28	2.28	-	2.28	2.28
Building Vendor Trips	0.35	4.10	2.35	0.01	0.22	0.13	0.36	0.01	0.12	0.13
Building Worker Trips	0.27	0.31	3.13	0.00	0.60	0.02	0.62	0.01	0.02	0.03
TOTAL	**5.79**	**39.07**	**28.93**	**0.05**	**0.82**	**2.43**	**3.26**	**0.02**	**2.42**	**2.44**
Paving										
Paving Off-Gas	0.00	-	-	-	-	-	-	-	-	-
Paving Off Road Diesel	5.20	32.09	20.70	0.03	-	2.74	2.74	-	2.74	2.74
Paving Vendor Trips	0.07	0.79	0.45	0.00	0.05	0.03	0.07	0.00	0.02	0.03
Paving Worker Trips	0.08	0.09	0.94	0.00	0.20	0.01	0.20	0.00	0.01	0.01
TOTAL	**5.35**	**32.97**	**22.09**	**0.03**	**0.25**	**2.78**	**3.01**	**0.00**	**2.77**	**2.78**
Architectural Coatings										
Architectural Coatings Off-Gas	17.54	-	-	-	-	-	-	-	-	-
Architectural Coatings Offroad Diesel	0.45	2.77	1.92	0.00	-	0.24	0.24	-	0.24	0.24
Architectural Coatings Worker Trips	0.05	0.06	0.56	0.00	0.12	0.00	0.12	0.00	0.00	0.01
TOTAL	**18.04**	**2.83**	**2.48**	**0.00**	**0.12**	**0.24**	**0.36**	**0.00**	**0.24**	**0.25**
MAXIMUM DAILY EMISSIONS[1]	**28.71**	**74.07**	**52.81**	**0.09**	**9.34**	**3.63**	**12.97**	**1.29**	**3.62**	**4.03**
Significance Criteria	137	250	550	250			100			55
Significant?	*No*	*No*	*No*	*No*			*No*			*No*

Issue 5
Would the project create objectionable odors affecting substantial number of people?

Impact Analysis
Project construction could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. These compounds would be emitted in various amounts and at various locations during construction. Sensitive receptors located in the vicinity of the construction site include the residences to the east of the site. Odors are highest near the source and would quickly dissipate off-site; any odors associated with construction would be temporary.

The project is a retail development and would not include land uses that would be sources of nuisance odors. Thus the potential for odor impacts associated with the project is less than significant.

Significance of Impacts
The proposed project does not include land uses that would be sources of nuisance odors. Any odors present during construction would be temporary and likely not affect sensitive receptors (residences), as these receptors are located 0.1 mile east of the project at a higher elevation. Odors are highest near the source and would dissipate before reaching the residences. Project impacts are less than significant.

Mitigation Measures
Project impacts related to objectionable or nuisance odors are less than significant. No mitigation is required.

Issue 6
Would the project result in substantial alteration of air movement in the area of the project?

Impact Analysis
The project would not result in substantial alteration of air movement in the area of the project. The Carroll Canyon Commercial Center project site is currently developed with two existing vacant office buildings totaling 76,241 square feet, associated facilities, and surface parking. The project proposes redevelopment of the existing office complex with a commercial development that would include a mix of retail shops, financial institution(s), sit-down restaurant(s), and fast-service restaurant(s). The existing vacant 76,241 square feet of office buildings and associated facilities would be demolished and replaced with approximately 145,000 square feet of commercial retail space. The proposed project would not result in constuction of buildings or uses that would have the potential of substatially alter air movement, and air quality impacts associated with air movement would not occur.

Significance of Impacts
The proposed project would not result in impacts associated with altering air movement in the project area.

Mitigation Measures

Project impacts related to alteration of air movement would not occur as a result of the proposed project. No mitigation is required.

5.5 GLOBAL CLIMATE CHANGE

This section of the EIR is based on the *Greenhouse Gas Evaluation* prepared for the proposed project by Scientific Resources Associated, dated June 26, 2012. A copy of the *Greenhouse Gas Evaluation* is included as Appendix D to this EIR. By nature, greenhouse gas and global climate change evaluations are a cumulative study, taking into account the entirety of the immediately surrounding area.

5.5.1 Existing Conditions

The Carroll Canyon Commercial Center project site is currently developed as an office complex with surface parking and landscaping. There is little to no native vegetation on-site. The existing 76,241 square foot office building and associated facilities would be demolished and replaced with approximately 144,621 square feet of commercial retail space. The site as it exists is a source of GHG emissions because, although the buildings on-site are currently vacant, the site is viable as an office complex and could, therefore, generate GHG emissions.

Background

Global climate change (GCC) refers to changes in average climatic conditions on Earth as a whole, including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), which are known as greenhouse gases (GHGs). These gases allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiative heat from escaping, thus warming the Earth's atmosphere. Gases that trap heat in the atmosphere are often called greenhouse gases, analogous to a greenhouse. GHGs are emitted by both natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the Earth's temperature. Without these natural GHGs, the Earth's temperature would be about 61 degree Fahrenheit (°F) cooler (California Environmental Protection Agency 2006). Emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere.

GHGs have been at the center of a widely contested political, economic, and scientific debate surrounding GCC. Although the conceptual existence of GCC is generally accepted, the extent to which GHGs contribute to it remains a source of debate. The State of California has been at the forefront of developing solutions to address GCC. GCC refers to any significant change in measures of climate, such as average temperature, precipitation, or wind patterns over a period of time. GCC may result from natural factors, natural processes, and/or human activities that change the composition of the atmosphere and alter the surface and features of land.

Global climate change attributable to anthropogenic (human) emissions of GHGs (mainly CO_2, CH_4 and N_2O) is currently one of the most important and widely debated scientific, economic, and political issues in the United States. Historical records indicate that global climate changes have occurred in the past due to natural phenomena (such as during previous ice ages). Some data indicate that the current global conditions differ from past climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts.

The IPCC concluded that a stabilization of GHGs at 400 to 450 ppm CO_2 equivalent concentration is required to keep global mean warming below 3.6º Fahrenheit (2º Celsius), which is assumed to be necessary to avoid dangerous climate change.

State law defines greenhouse gases as any of the following compounds: CO_2, CH_4, nitrous oxide N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) [California Health and Safety Code Section 38505(g)]. CO_2, followed by CH_4 and N_2O, are the most common GHGs that result from human activity.

Sources and Global Warming Potentials of GHG

The State of California GHG Inventory performed by CARB compiled statewide anthropogenic GHG emissions and sinks. It includes estimates for CO_2, CH_4, N_2O, SF_6, HFCs, and PFCs. The current inventory covers the years 1990 to 2004, and is summarized in Table 5.5-1, *State of California GHG Emissions by Sector*. Data sources used to calculate this GHG inventory include California and Federal agencies, international organizations, and industry associations. The calculation methodologies are consistent with guidance from the IPCC. The 1990 emissions level is the sum total of sources and sinks from all sectors and categories in the inventory. The inventory is divided into seven broad sectors and categories in the inventory. These sectors include: Agriculture, Commercial, Electricity Generation, Forestry, Industrial, Residential, and Transportation.

Table 5.5-1. *State of California GHG Emissions by Sector*

Sector	Total 1990 Emissions ($MMTCO_2e$)	Percent of Total 1990 Emissions	Total 2008 Emissions ($MMTCO_2e$)	Percent of Total 2008 Emissions
Agriculture	23.4	5%	28.06	6%
Commercial	14.4	3%	14.68	3%
Electricity Generation	110.6	26%	116.35	25%
Forestry (excluding sinks)	0.2	<1%	0.19	<1%
Industrial	103.0	24%	92.66	20%
Residential	29.7	7%	28.45	6%
Transportation	150.7	35%	174.99	37%
Recycling and Waste			6.71	1%
High GWP Gases			15.65	3%
Forestry Sinks	(6.7)		(3.98)	

When accounting for GHGs, all types of GHG emissions are expressed in terms of CO_2 equivalents (CO_2e) and are typically quantified in metric tons (MT) or millions of metric tons (MMT).

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas" (USEPA 2006). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main greenhouse gases that have been attributed to human activity include CH_4, which has a GWP of 21, and N_2O, which has a GWP of 310. Table 5.5-2, *Global Warming Potentials and Atmoshpheric Lifetimes of GHGs*, presents the GWP and atmospheric lifetimes of common GHGs.

Table 5.5-2. *Global Warming Potentials and Atmospheric Lifetimes of GHGs*

GHG	Formula	100-Year Global Warming Potential	Atmospheric Lifetime (Years)
Carbon Dioxide	CO_2	1	Variable
Methane	CH_4	21	12 ± 3
Nitrous Oxide	N_2O	310	120
Sulfur Hexafluoride	SF_6	23,900	3,200

Human-caused sources of CO_2 include combustion of fossil fuels (coal, oil, natural gas, gasoline, and wood). Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. Concentrations of CO_2 have increased in the atmosphere since the industrial revolution.

CH_4 is the main component of natural gas and also arises naturally from anaerobic decay of organic matter. Human-caused sources of natural gas include landfills, fermentation of manure, and cattle farming. Human-caused sources of N_2O include combustion of fossil fuels and industrial processes such as nylon production and production of nitric acid. Other GHGs are present in trace amounts in the atmosphere and are generated from various industrial or other uses.

In addition to the State of California GHG Inventory, a more specific regional GHG inventory was prepared by the University of San Diego School of Law Energy Policy Initiative Center. This San Diego County Greenhouse Gas Inventory (SDCGHGI) is a detailed catalog that takes into account the unique characteristics of the region in calculating emissions. The SDCGHGI calculated GHG emissions for 1990, 2006, and projected 2020 emissions. Based on this inventory and the emission projections for the region, the study found that emissions of GHGs must be reduced by 33 percent below business as usual in order for San Diego County to achieve 1990 emission levels by the year 2020. "Business as usual" (BAU), or forecasted emissions, is defined as the emissions that would occur in the absence of Assembly Bill 32's mandated reductions. Construction of buildings using Title 24 building standards or San Diego County's 2006 building code would create "business as usual" emissions.

Areas where feasible reductions can occur and the strategies for achieving those reductions are outlined in the SDCGHGI. A summary of the various sectors that contribute GHG emissions in San Diego County for the year 2006 is provided in Table 5.5-3, *San Diego County 2006 GHG Emissions by Category*. Total GHGs in San Diego County are estimated at 34 $MMTCO_2e$.

Table 5.5-3. *San Diego County 2006 GHG Emissions by Category*

Sector	Total Emissions ($MMTCO_2e$)	Percent of Total Emissions
On-Road Transportation	16	46%
Electricity	9	25%
Natural Gas Consumption	3	9%
Civil Aviation	1.7	5%
Industrial Processes & Products	1.6	5%
Other Fuels/Other	1.1	4%
Off-Road Equipment & Vehicles	1.3	4%
Waste	0.7	2%
Agriculture/Forestry/Land Use	0.7	2%
Rail	0.3	1%
Water-Born Navigation	0.13	0.4%

The sources of GHG emissions, GWP, and atmospheric lifetime of GHGs are all important variables to be considered in the process of calculating CO_2e for discretionary land use projects that require a climate change analysis.

Typical Adverse Effects

The Climate Scenarios Report (CCCC 2006), uses a range of emissions scenarios developed by the IPCC to project a series of potential warming ranges (i.e., temperature increases) that may occur in California during the 21st century. Three warming ranges were identified: lower warming range (3.0 to 5.5 degrees Fahrenheit (ºF)); medium warming range (5.5 to 8.0 ºF); and higher warming range (8.0 to 10.5 ºF). The Climate Scenarios Report then presents an analysis of the future projected climate changes in California under each warming range scenario.

According to the report, substantial temperature increases would result in a variety of impacts to the people, economy, and environment of California. These impacts would result from a projected increase in extreme conditions, with the severity of the impacts depending upon actual future emissions of GHGs and associated warming. These impacts are described below.

Public Health. Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to O_3 formation are projected to increase by 25 to 35 percent under the lower warming range and 75 to 85 percent under the medium warming range. In addition, if global background O_3 levels increase as is predicted in some scenarios, it may become impossible to meet local air quality standards. An increase in wildfires could also occur, and the corresponding increase in the release of pollutants including $PM_{2.5}$ could further compromise air quality. The Climate Scenarios Report indicates that large wildfires could become up to 55 percent more frequent of GHG emissions are not significantly reduced.

Potential health effects from GCC may arise from temperature increases, climate-sensitive diseases, extreme events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems (e.g., heat rash and heat stroke). In addition, climate sensitive diseases (such as malaria, dengue fever, yellow fever, and encephalitis) may increase, such as those spread by mosquitoes and other disease-carrying insects.

Water Resources. A vast network of reservoirs and aqueducts capture and transport water throughout the State from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada mountain snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages. In addition, if temperatures continue to rise more precipitation would fall as rain instead of snow, further reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. The State's water resources are also at risk from rising sea levels. An influx of seawater would degrade California's estuaries, wetlands, and groundwater aquifers.

Agriculture. Increased GHG and associated increases in temperature are expected to cause widespread changes to the agricultural industry, reducing the quantity and quality of agricultural

products statewide. Significant reductions in available water supply to support agriculture would also impact production. Crop growth and development will change as will the intensity and frequency of pests and diseases.

Ecosystems/Habitats. Continued global warming will likely shift the ranges of existing invasive plants and weeds, thus altering competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Continued global warming is also likely to increase the populations of and types of pests. Continued global warming would also affect natural ecosystems and biological habitats throughout the State.

Wildland Fires. Global warming is expected to increase the risk of wildfire and alter the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the State.

Rising Sea Levels. Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the State's coastal regions. Under the high warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. A sea level risk of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten levees and inland water systems, and disrupt wetlands and natural habitats.

Regulatory Setting

All levels of government have some responsibility for the protection of air quality, and each level (Federal, State, and regional/local) has specific responsibilities relating to air quality regulation. GHG emissions and the regulation of GHGs is a relatively new component of air quality.

Federal

GCC is being addressed at both the international and Federal levels. In 1988, the United Nations and the World Meteorological Organization established the IPCC to assess the scientific, technical, and socioeconomic information relevant to understanding the scientific basis for human-induced climate change, its potential impacts, and options for adaptation and mitigation. The most recent reports of the IPCC have emphasized the scientific consensus that real and measurable changes to the climate are occurring, that they are caused by human activity, and that significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable.

In October 1993, President Clinton announced his Climate Change Action Plan (CCAP), which had a goal of returning GHG emissions to 1990 levels by the year 2000. This was to be accomplished through 50 initiatives that relied on innovative voluntary partnerships between the private sector and government aimed at producing cost-effective reductions in GHG emissions. On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments agreed to gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts,

including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of GCC. Recently, the United States Supreme Court declared in the court case of Massachusetts et al. vs. the Environmental Protection Agency et al., 549 C.S. 497 (2007), that the EPA does have the ability to regulate GHG emissions. In addition to the national and international efforts described above, many local jurisdictions have adopted climate change policies and programs.

Endangerment Finding. On April 17, 2009, EPA issued its proposed endangerment finding for GHG emissions. On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

> **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases –CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 – in the atmosphere threaten the public health and welfare of current and future generations.
>
> **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution that threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009.

Mandatory GHG Reporting Rule. On March 10, 2009, in response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), the EPA proposed a rule that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of Greenhouse Gases Rule was signed, and was published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. The rule will collect accurate and comprehensive emissions data to inform future policy decisions.

EPA is requiring suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA. The gases covered by the proposed rule are CO_2, CH_4, N_2O, HFC, PFC, SF_6, and other fluorinated gases including nitrogen trifluoride (NF_3) and hydrofluorinated ethers (HFE).

Corporate Average Fuel Economy Standards. The Federal Corporate Average Fuel Economy (CAFE) standard determines the fuel efficiency of certain vehicle classes in the United States. In 2007, as part of the Energy and Security Act of 2007, CAFE standards were increased for new light-duty vehicles to 35 miles per gallon by 2020. In May 2009, President Obama announced plans to increase CAFE standards to require light-duty vehicles to meet an average fuel economy of 35.5 miles per gallon by 2016.

State

The following subsections describe regulations and standards that have been adopted by the State of California to address GCC issues.

Assembly Bill 32, the California Global Warming Solutions Act of 2006. In September 2006, Governor Schwartzenegger signed California AB 32, the global warming bill, into law. AB 32 directs the ARB to do the following:

- Make publicly available a list of discrete early action GHG emission reduction measures that can be implemented prior to the adoption of the statewide GHG limit and the measures required to achieve compliance with the statewide limit.
- Make publicly available a GHG inventory for the year 1990 and determine target levels for 2020.
- On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures.
- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020, to become operative on January 1, 2012, at the latest. The emission reduction measures may include direct emission reduction measures, alternative compliance mechanisms, and potential monetary and non-monetary incentives that reduce GHG emissions from any sources or categories of sources that ARB finds necessary to achieve the statewide GHG emissions limit.
- Monitor compliance with and enforce any emission reduction measure adopted pursuant to AB 32.

AB 32 required that by January 1, 2008, ARB determine what the statewide GHG emissions level was in 1990, and approve a statewide GHG emissions limit that is equivalent to that level, to be achieved by 2020. ARB adopted its Scoping Plan in December 2008, which provided estimates of the 1990 GHG emissions level and identified sectors for the reduction of GHG emissions. The ARB has estimated that the 1990 GHG emissions level was 427 MMT net CO_2e. The ARB estimates that a reduction of 173 MMT net CO_2e emissions below BAU would be required by 2020 to meet the 1990 levels. This amounts to a 15 percent reduction from today's levels, and a 30 percent reduction from projected BAU levels in 2020.

Senate Bill 97. Senate Bill 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directs OPR to develop draft CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions" by July 1, 2009, and directs the Resources Agency to certify and adopt the CEQA guidelines by January 1, 2010.

The Governor's Office of Planning and Research (OPR) published a technical advisory on CEQA and Climate Change on June 19, 2008. The guidance did not include a suggested threshold. The OPR does recommend that CEQA analyses include the following components:

- Identify greenhouse gas emissions

- Determine significance
- Mitigate impacts

In April 2009, the OPR published its proposed revisions to CEQA to address GHG emissions. The amendments to CEQA indicate the following:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with State, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation."
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- EIRs must specifically consider a project's energy use and energy efficiency potential.

On July 3, 2009, the California Natural Resources Agency published proposed amendment of regulations based on OPR's proposed revisions to CEQA to address GHG emissions. On that date, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting these amendments pursuant to Public Resources Code section 21083.05. Having reviewed and considered all comments received, on December 30, 2009, the Natural Resources Agency adopted the proposed amendments to the State CEQA guidelines in the California Code of Regulations. These amendments became final on March 18, 2010.

Executive Order S-3-05. Executive Order S-3-05, signed by Governor Schwartzenegger on June 1, 2005, calls for a reduction in GHG emissions to 1990 levels by 2020 and for an 80 percent reduction in GHG emissions by 2050. Executive Order S-3-05 also calls for the California EPA (CalEPA) to prepare biennial science reports on the potential impact of continued GCC on certain sectors of the California economy. The first of these reports, *Our Changing Climate: Assessing Risks to California*, and its supporting document *Scenarios of Climate Change in California: An Overview* were published by the California Climate Change Center in 2006.

Executive Order S-21-09. Executive Order S-21-09 was enacted by Governor Schwartzenegger on September 15, 2009. Executive Order S-21-09 requires that the ARB, under its AB 32 authority, adopt a regulation by July 31, 2010, that sets a 33-percent renewable energy target as established in Executive Order S-14-08. Under Executive Order S-21-09, the ARB will work with the Public Utilities Commission and California Energy Commission to encourage the creation and use of renewable energy sources, and will regulate all California utilities. The ARB will also consult with the Independent System Operator and other load balancing authorities on the impacts on reliability, renewable integration requirements, and interactions with wholesale power markets in carrying out the provisions of the Executive Order. The order requires the ARB to establish highest priority for those resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health.

California Code of Regulations Title 24. Although not originally intended to reduce greenhouse gas emissions, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The GHG emission inventory was based on Title 24 standards as of October 2005; however, Title 24 has been updated as of 2008 and standards are set to be phased in beginning in January 2010. The new Title 24 standards are anticipated to increase energy efficiency by 15 percent, thereby reducing GHG emissions from energy use by 15 percent. Energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in greenhouse gas emissions. Therefore, increased energy efficiency results in decreased greenhouse gas emissions.

State Standards Addressing Vehicular Emissions. California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. Regulations adopted by ARB would apply to 2009 and later model year vehicles. ARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030. Once implemented, emissions from new light-duty vehicles are expected to be reduced in San Diego County by 21 percent by 2020. The ARB has adopted amendments to the "Pavley" regulations that GHG emissions in new passenger vehicles from 2009 through 2016. The amendments, approved by the Board on September 24, 2009, are part of California's commitment toward a nation-wide program to reduce new passenger vehicle GHGs from 2012 through 2016. ARB's September amendments will cement California's enforcement of the Pavley rule starting in 2009 while providing vehicle manufacturers with new compliance flexibility. The amendments will also prepare California to harmonize its rules with the federal rules for passenger vehicles.

Executive Order S-01-07. Governor Schwartzenegger enacted Executive Order S-01-07 on January 18, 2007. Essentially, the order mandates the following: 1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least ten percent by 2020; and 2) that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California. It is assumed that the effects of the LCFS would be a ten percent reduction in GHG emissions from fuel use by 2020. On April 23, 2009, ARB adopted regulations to implement the LCFS.

Senate Bill 375. Senate Bill 375 requires that regions within the state which have a metropolitan planning organization must adopt a sustainable communities strategy (SCS) as part of their regional transportation plans. The strategy must be designed to achieve certain goals for the reduction of GHG emissions. The bill finds that GHG from autos and light trucks can be substantially reduced by new vehicle technology, but even so "*it will be necessary to achieve significant additional greenhouse gas reductions from changed land use patterns and improved transportation. Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32.*" SB 375 provides that new CEQA provisions be enacted to "*encourage developers to submit applications and local governments to make land use decisions that will help the state achieve its goals under AB 32*," and that "*current planning models and analytical techniques used for making transportation infrastructure decisions and for air quality planning should be able to assess the effects of policy choices, such as residential development patterns, expanded transit service and accessibility, the walkability of communities, and the use of economic incentives and disincentives.*"

Local

The City of San Diego has adopted policies in their Conservation Element (City of San Diego 2008) that address state and federal efforts to reduce GHG emissions. The policies that are applicable to the project include the following:

Policy CE-A.5 Employ sustainable or "green" building techniques for the construction and operation of buildings.

(a) Develop and implement sustainable building standards for new and significant remodels of residential and commercial buildings to maximize energy efficiency, and to achieve overall net zero energy consumption by 2020 for new residential buildings and 2030 for new commercial buildings. This can be accomplished through factors including, but not limited to:
    - Designing mechanical and electrical systems that achieve greater energy efficiency with currently available technology;
    - Minimizing energy use through innovative site design and building orientation that addresses factors such as sun-shade patterns, prevailing winds, landscape, and sun-screens;
    - Employing self generation of energy using renewable technologies;
    - Combining energy efficient measures that have longer payback periods with measures that have shorter payback periods;
        - Reducing levels of non-essential lighting, heating and cooling; and
        - Using energy efficient appliances and lighting.

(b) Provide technical services for "green" buildings in partnership with other agencies and organizations.

Policy CE-A-7 Construct and operate buildings using materials, methods, and mechanical and electrical systems that ensure a healthful indoor air quality. Avoid contamination by carcinogens, volatile organic compounds, fungi, molds, bacteria, and other known toxins.

(a) Eliminate the use of chlorofluorocarbon-based refrigerants in newly constructed facilities and major building renovations and retrofits for all heating, ventilation, air conditioning, and refrigerant-based building systems.

(b) Reduce the quantity of indoor air contaminants that are odorous or potentially irritating to protect installers and occupants' health and comfort. Where feasible, select low-emitting adhesives, paints, coatings, carpet systems, composite wood, agri-fiber products, and others.

Policy CE-A.8 Reduce construction and demolition waste in accordance with Public Facilities Element, Policy PF-I.2, or be renovating or adding on to existing buildings, rather than constructing new buildings.

Policy CE-A.9 Reuse building materials, use materials that have recycled content, or use materials that are derived from sustainable or rapidly renewable sources to the extent possible, through factors including:

- Scheduling time for deconstruction and recycling activities to take place during project demolition and construction phases;
- Using life cycle costing in decision making for materials and construction techniques. Life cycle costing analyzes the costs and benefits over the life of a particular product, technology, or system;
- Removing code obstacles to using recycled materials and for construction; and
- Implementing effective economic incentives to recycle construction and demolition debris.

Policy CE-A.10 Include features in buildings to facilitate recycling of waste generated by building occupants and associated refuse storage areas.

- Provide permanent, adequate, and convenient space for individual building occupants to collect refuse and recyclable material.
- Provide a recyclables collection area that serves the entire building or project. The space should allow for the separation, collection and storage of paper, glass, plastic, metals, yard waste, and other materials as needed.

Policy CE-A.11 Implement sustainable landscape design and maintenance.

(a) Use integrated pest management techniques, where feasible, to delay, reduce, or eliminate dependence on the use of pesticides, herbicides, and synthetic fertilizers.
(b) Encourage composting efforts through education, incentives, and other activities.
(c) Decrease the amount of impervious surfaces in developments, especially where public places, plazas and amenities are proposed to serve as recreation opportunities.
(d) Strategically plant deciduous shade trees, evergreen trees, and drought tolerant native vegetation, as appropriate, to contribute to sustainable development goals.
(e) Reduce use of lawn types that require high levels of irrigation.
(f) Strive to incorporate existing mature trees and native vegetation into site designs.

(g) Minimize the use of landscape equipment powered by fossil fuels.
(h) Implement water conservation measures in site/building design and landscaping.
(i) Encourage the use of high efficiency irrigation technology, and recycled site water to reduce the use of potable water for irrigation. Use recycled water to meet the needs of development projects to the maximum extent feasible.

GHG emissions associated with the Carroll Canyon Commercial Center project were estimated separately for five categories of emissions: (1) construction; (2) energy use, including electricity and natural gas usage; (3) water consumption; (4) solid waste handling; and (5) transportation. The analysis includes an evaluation of the existing conditions, as well as proposed project conditions. The analysis includes a baseline estimate assuming Title 24-compliant buildings, which is considered business as usual for the Project. Emissions were estimated based on emission factors from the California Climate Action Registry General Reporting Protocol. This inventory presents emissions based on "business as usual" assumptions.

The complete emissions inventory is summarized below and included in the appendix of the Greenhouse Gas Evaluation, included as Appendix D to this EIR.

Existing Greenhouse Gas Emissions

The site is currently occupied by a 76,241 square foot office building and associated uses. The *Carroll Canyon Commercial Center Draft Traffic Impact Analysis* (LOS Engineering 2012) did not address trip generation from current uses, as the existing buildings are vacant; however, based on the City of San Diego's Trip *Generation Manual* (City of San Diego 2003), the existing offices could generate 10 trips per 1,000 square feet, for a total of 762 ADT, if they were to be occupied. Vehicles are a source of existing GHG emissions. In addition to GHGs generated by vehicles, indirect GHG emissions are generated from electricity, natural gas, and water use.

Baseline energy use was calculated as a function of kWh per square foot based on average performance for California commercial buildings, according to the *California Commercial End-Use Survey*. The energy use figures in these reports represent current state-wide average uses for all land uses, including those that are compliant with 2005 Title 24 standards. Because the existing buildings were constructed prior to adoption of these energy efficiency standards, it is likely that energy efficiency is lower and that average energy use figures underestimate energy use for these buildings. Thus, the baseline energy use provides a conservative estimate of current energy requirements relative to future energy requirements.

Energy Usage

Electricity usage rates for the existing office space were calculated based on estimated annual rates of 13.10 kilowatt-hours (kWh) per square foot from the *California Commercial End-Use Survey* for office space. Emissions were calculated based on emission factors in the California Climate Action Registry General Reporting Protocol, Version 3.1, which assumes that for California, energy use (electricity) would have emissions of 724.12 lbs/MWh of CO_2, 0.0302 lbs/MWh of CH_4, and 0.0081 lbs/MWh of N_2O. Natural gas usage rates were calculated based on estimated annual rates of 10.54 kiloBTUs/square foot/year for office space. For natural gas usage, the Protocol assumes that natural gas would have emissions of 53.06 kg/MMBTU of CO_2, 0.0059 kg/MMBTU of CH_4, and 0.0001

kg/MMBTU of N_2O.

Water Usage
Water use and energy use are often closely linked. The provision of potable water to commercial consumers requires large amounts of energy associated with five stages: (1) source and conveyance, (2) treatment, (3) distribution, (4) end use and (5) wastewater treatment. Existing water use was estimated based on a usage rate of 35 gallons per square foot annually. The existing water use was estimated at 2,668,435 gallons.

The California Energy Commission estimates that in southern California, water usage will have an embodied energy of 12,700 kWh per million gallons. Emissions of greenhouse gases were calculated based on the California Climate Action Registry General Reporting Protocol, which assumes that energy use (electricity) would have emissions of 724.12 lbs/MWh of CO_2, 0.0302 lbs/MWh of CH_4, and 0.0081 lbs/MWh of N_2O.

Vehicle Emissions
Emissions from vehicles accessing the site if the existing office buildings were occupied were estimated using the EMFAC2007 model emission factors, assuming an average trip length of 5.8 miles based on data for average trip lengths within San Diego County estimated by SANDAG.

Solid Waste
Solid waste generation will also contribute to emissions of GHGs, through waste collection and management activities and emissions of GHGs from landfilling. Solid waste GHG emissions were calculated using the CalEEMod Model.

Estimated GHG emissions associated with existing uses are presented in Table 5.5-4, *Summary of Estimated Existing Operational Greenhouse Gas Emissions.*

Table 5.5-4. *Summary of Estimated Existing Operational Greenhouse Gas Emissions*

Emission Source	Annual Emissions (metric tons/year)			
	CO_2	CH_4	N_2O	CO_2e
Operational Emissions				
Electricty Use	341	0.0142	0.0038	342
Natural Gas Use	105	0.0117	0.0002	105
Water Use	14	0.0001	0.00006	14
Solid Waste Management	26	--	--	26
Vehicle Emissions	581	--	--	581
Total	**1,067**	**0.026**	**0.004**	**1,068**
Global Warming Potential Factor	1	21	310	
CO_2 Equivalent Emissions	1,067	0	1	1,068
Total CO_2 Equivalent Emissions	**1,068**			

5.5.2 Impact Analysis

The Carroll Canyon Commercial Center project would result in both construction and operational impacts which would contribute greenhouse gas emissions affecting global climate change. Construction impacts include emissions associated with the construction of the project. Operational impacts include emissions associated with the project, including traffic, at full buildout.

Thresholds of Significance

According to the California Natural Resources Agency, "due to the global nature of GHG emissions and their potential effects, GHG emissions will typically be addressed in a cumulative impacts analysis." According to Appendix G of the CEQA Guidelines, a project may be considered to have a significant GCC impact if the proposed project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

As discussed in Section 15064.4 of the CEQA Guidelines, the determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency, consistent with the provisions in Section 15064. Section 15064.4 further provides that a lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or
(2) Rely on a qualitative analysis or performance-based standards.

Section 15064.4 also advises a lead agency to consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.

The California Air Pollution Control Officers Association proposed a screening threshold of 900 metric tons of CO_2e to evaluate whether a project requires further analysis. Projects with emissions above the 900 metric ton threshold are required to evaluate whether emissions can be reduced

below "business as usual" levels. The City of San Diego has adopted this level as a screening value.

The City of San Diego has proposed a threshold based on the ARB's Scoping Plan. Based on the ARB's analysis that statewide 2020 business as usual GHG emissions would be 596 $MMTCO_2e$ and that 1990 emissions were 427 $MMTCO_2e$, local lead agencies have estimated that a reduction of 28.3 percent below business as usual is required to achieve the AB 32 reduction mandate. According to the ARB, "ARB staff estimated 2020 business-as-usual GHG emissions, which represent the emissions that would be expected to occur in the absence of any GHG reductions actions. ARB staff estimates the statewide 2020 business-as-usual greenhouse gas emissions will be 596 MMTCO2E. Emission reductions from the recommended measures in the Scoping Plan total 169 MMTCO2E, allowing California to attain the 2020 emissions limit of 427 $MMTCO_2E$.

The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors. For the purposes of the Scoping Plan, ARB used three-year average emissions, by sector, for 2002-2004 to forecast emissions to 2020. At the time the Scoping Plan process was initiated, 2004 was the most recent year for which actual data were available."

According to the ARB, "Growth factors are sector-specific and are derived from several sources, including the energy demand models generated by California Energy Commission (CEC) for their 2007 Integrated Energy Policy Report (IEPR), business economic growth data developed for ARB's criteria pollutant forecast system (CEFS), population growth data from the California Department of Finance, and projections of vehicle miles traveled from ARB's on-road mobile source emissions model, EMFAC2007. For the electricity and other energy sectors, ARB consulted with CEC to select the most appropriate growth factor."

The project has been analyzed based on a reduction from business as usual of 28.3 percent to evaluate significance of global climate change impacts. The City is in the process of reviewing their GHG significance thresholds, but to date, no new standards have been proposed.

Issue 1

Would the proposed project generate greenhouse gas emission, either directly or indirectly, that may have a significant impact on the environment?

Impact Analysis

GHG emissions associated with the Carroll Canyon Commercial Center project were estimated separately for five categories of emissions: (1) construction; (2) energy use, including electricity and natural gas usage; (3) water consumption; (4) solid waste handling; and (5) transportation. The analysis includes a baseline estimate assuming Title 24-compliant buildings, which is considered BAU for the project. Emissions were estimated based on emission factors from the California Climate Action Registry General Reporting Protocol. This inventory presents emissions based on BAU assumptions.

Construction Greenhouse Gas Emissions

Construction GHG emissions include emissions from heavy construction equipment, truck traffic, and worker trips. Emissions were calculated using the CalEEMod Model. The CalEEMod Model contains emission factors from the OFFROAD2007 model for heavy construction equipment, and from the EMFAC2007 model for on-road vehicles. Table 5.5-5, *Construction GHG Emissions*, presents a summary of construction GHG emissions.

Table 5.5-5. *Construction GHG Emissions*

Construction Phase	CO_2e Emissions (metric tons/yr)
Construction	1,143

Lead agencies, including the South Coast Air Quality Management District, the City of San Diego, and the County of San Diego, recommend that construction emissions be amortized over a 30-year period to account for the contribution of construction emissions over the lifetime of the project. Amortizing the emissions from construction of the proposed project over a 30-year period would result in an annual contribution of 38 metric tons of CO_2e. These emissions are added to operational emissions to account for the contribution of construction to GHG emissions for the lifetime of the project.

Operational Greenhouse Gas Emissions

Energy Use

Business as usual electricity usage rates for the existing space were calculated from the *California Commercial End-Use Survey* based on estimated annual 14.06 kWh/square foot for the shopping center. Emissions were calculated based on emission factors in the California Climate Action Registry General Reporting Protocol, Version 3.1, which assumes that for California, energy use (electricity) would have emissions of 724.12 lbs/MWh of CO_2, 0.0302 lbs/MWh of CH_4, and 0.0081 lbs/MWh of N_2O. Natural gas usage rates were calculated based on estimated annual rates of 4.62 kiloBTUs/square foot for the shopping center. For natural gas usage, the Protocol assumes that natural gas would have emissions of 53.06 kg/MMBTU of CO_2, 0.0059 kg/MMBTU of CH_4, and 0.0001 kg/MMBTU of N_2O.

Water Usage

GHG emissions were calculated on the basis of the embodied energy of water as discussed under existing conditions. Water usage was estimated based on an estimated water usage of 35 gallons per year per square foot. Total water usage would therefore be 5.062 million gallons per year.

Vehicle Emissions

Mobile source greenhouse gas emissions were estimated based on the projected ADTs from the Traffic Impact Analysis (LOS Engineering 2012). Based on the analysis, the driveway trip generation rate for the project is 10,136 ADT. This trip generation rate reflects the rate without taking into consideration the location of the project in an area where pass-by trips would occur, and where a mix of uses already exists. Emissions from vehicles were estimated using the EMFAC2007 model emission factors, assuming an average trip length of 5.8 miles based on data for average trip lengths within San Diego County estimated by SANDAG.

Solid Waste

Solid waste generation will also contribute to emissions of GHGs, through waste collection and management activities and emissions of GHGs from landfilling. Solid waste GHG emissions were calculated using the CalEEMod Model.

Operational Emissions Summary

The results of the inventory for operational emissions for BAU are presented in Table 5.5-5, *Summary of Estimated Operational Greenhouse Gas Emissions – Business as Usual Scenario.* These include GHG emissions associated with buildings (natural gas, purchased electricity), water consumption (energy embodied in potable water), solid waste management (including transport and landfill gas generation), and vehicles. Table 5.5-6 summarizes projected emissions using the methodologies noted above.

Table 5.5-6. *Summary of Estimated Operational Greenhouse Gas Emissions – Business as Usual Scenario*

Emission Source	Annual Emissions (Metric tons/year)			
	CO_2	CH_4	N_2O	CO_2e
Operational Emissions				
Electricity Use	668	0.0279	0.0075	671
Natural Gas Use	35	0.0039	0.0001	36
Water Use	21	0.0009	0.0002	21
Solid Waste Management	47	--	--	47
Vehicle Emissions	5,579	--	--	5,579
Amortized Construction Emissions	38	--	-	38
Total	**6,388**	**0.0327**	**0.0078**	**6,392**
Global Warming Potential Factor	**1**	**21**	**310**	**--**
CO_2 Equivalent Emissions	**6,388**	**1**	**2**	**6,392**
TOTAL CO_2 Equivalent Emissions	**6,392**			
EXISTING $C0_2$ EQUIVALENT EMISSIONS	**1,068**			
NET CO_2 EQUIVALENT EMISSIONS	**5,324**			

As shown in Table 5.5-5, the net emissions associated with the Carroll Canyon Commercial Center are above the 900 metric ton screening threshold under business as usual conditions. The project was therefore evaluated to assess the GHG emission reductions that would be achieved through state and federal programs and through project design features.

As discussed above, a significance threshold of 28.3 percent below BAU levels is considered to demonstrate that a project would be consistent with the goals of AB 32. As shown in Table 5.5-6, *Summary of Estimated Operational Greenhouse Gas Emissions,* and as discussed in the ARB's *Staff Report, California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit*, vehicular emissions are the greatest contributor to GHG emissions. Because the applicant does not have direct control over the types of vehicles or emission/fuel standards, the effect of California programs to reduce GHG emissions from vehicles was evaluated.

Based on the SDCGHGI, the percent reductions in GHG emissions anticipated through implementation of the Federal CAFE standards, LCFS, and Pavley fuel efficiency standard (analogous to the Federal CAFE standard), as well as the effect of light/heavy vehicle efficiency/hybridization programs can be estimated. Emissions were calculated based on the

ARB's Comparison *of Greenhouse Gas for the United States and Canada under U.S. CAFE Standards and California Air Resources Board Greenhouse Gas Regulations.*

Because the project is located in an area with residential uses and will serve local retail needs, the analysis took into account pass-by trips based on a comparison between "driveway" trips and "cumulative" trips as reported in the Traffic Impact Analysis. Based on the analysis, the project will generate a total of 7,095 cumulative ADT.

In addition to the energy efficiency and mobile source emissions reductions discussed above, reductions attributable to California's RPS (SB 1078; 2002) were included in the emission calculations for electricity use. SB 1078 initially set a target of 20 percent of energy to be sold from renewable sources by the year 2017. The schedule for implementation of the RPS was accelerated in 2006 with the Governor's signing of SB 107, which accelerated the 20 percent RPS goal from 2017 to 2010. On November 17, 2008, the Governor signed Executive Order S-14-08, which requires all retail sellers of electricity to serve 33 percent of their load with renewable energy by 2020. The Governor signed Executive Order S-21-09 on September 15, 2009, which directs ARB to implement a regulation consistent with the 2020 33 percent renewable energy target by July 31, 2010. As of September 23, 2010, the ARB has adopted the regulation that implements the 33 percent renewable energy standard.

According to the SDCGHGI, implementation of the 20 percent RPS goal by 2010 would reduce GHG emissions by a further 14 percent from 2006 levels; the inventory estimated that San Diego Gas and Electric was providing 6 percent of its electricity from renewable resource in 2006. To account for the implementation of the 20 percent RPS, a 14 percent reduction in GHG emissions was assumed. Implementation of Executive Order S-21-09 (i.e., the 33 percent RPS) will result in additional GHG reductions of 27 percent below 2006 levels.

Based on information regarding Title 24 standards as of 2008 (CEC 2007), it is anticipated that for the San Diego climate zone, estimated electricity savings for nonresidential buildings are 8.596 percent and natural gas savings are 8.633 percent. These reductions were considered in calculating emissions with GHG reduction measures.

- Entire project is located within one-half mile of an existing/planned Class I or Class II bike lane and project design includes a comparable network that connects the project to the existing offsite facility.
- Bus service provides headways of one hour or less for stops within one-quarter mile; project provides safe and convenient bicycle/pedestrian access to transit stop(s).
- Project will comply with Title 24 energy efficiency standards.
- Project will implement an erosion and sedimentation control program (SWPPP).
- Project will maximize water efficiency within the buildings to reduce the burden on the municipal water supply and wastewater systems by using low flush volume fixtures in all restrooms.
- Project will use refrigerants that do not contain CFCs, hydrocarbons that deplete the ozone layer.
- Project has at least three of the following on site and/or offsite within one-quarter mile:

Residential Development, Retail Development, Open Space, or Office (project is located adjacent to residential and within one-quarter mile of office uses).

- Project site is on vacant infill site, redevelopment area, or brownfield or grey field lot that is highly accessible to regional destinations, where the destinations rating of the development site (measured as the weighted average travel time to all other regional destinations) is improved by 100 percent when compared to an alternate greenfield site.

Table 5.5-7 presents the estimated GHG emissions for the project, with implementation of the GHG reduction measures summarized. As shown in Table 5.5-7, emissions from the Carroll Canyon Commercial Center project, considering GHG reduction measures discussed above, would be more than 28.3 percent below business as usual. Accordingly, the Carroll Canyon Commercial Center project would meet the goals of AB 32 and would not result in cumulatively considerable significant global climate impacts.

Table 5.5-7. *Summary of Estimated Operational Greenhouse Gas Emissions with GHG Reduction Measures*

Emission Source	Annual Emissions (Metric tons/year)			
	CO_2	CH_4	N_2O	CO_2e
Operational Emissions				
Electricity Use	464	0.0193	0.0052	464
Natural Gas Use	33	0.0037	0.0001	33
Water Use	15	0.0006	0.0002	16
Solid Waste Management	47	--	--	47
Vehicle Emissions	3,049	--	--	3,049
Amortized Construction Emissions	38	--	-	38
Total	**3,646**	**0.0236**	**0.0055**	**3,648**
Global Warming Potential Factor	**1**	**21**	**310**	**--**
CO_2 Equivalent Emissions	**3,646**	**0.5**	**2**	**3,648**
TOTAL CO_2 Equivalent Emissions	**3,648**			
Business as Usual $C0_2$ Equivalent Emissions	**6,392**			
Percent Reduction from Business as Usual	**42.9%**			

Significance of Impacts

The proposed project would result in the generation of emissions. However, these emissions would be 42.9 percent below BAU emissions, which demonstrates greater efficiency than the 28.3 percent below BAU emissions established as the threshold. Therefore, project impacts would be less than signicant.

Mitigation Measures

The project results in less than significant emissions impacts. No mitigation is required.

Issue 2

Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases?

Impact Analysis

As concluded above, the proposed project is in compliance with applicable emissions reductions regulations. In addition, to demonstrate consistency with the adopted Conservation Element of the City of San Diego's General Plan, which addresses GHG emissions, the Carroll Canyon Commercial Center project would comply with the Conservation Element policies that are applicable to the project, including:

Policy CE-A.5 Employ sustainable or "green" building techniques for the construction and operation of buildings.

The Carroll Canyon Commercial Center is proposing to exceed Title 24 standards as of 2005 by 20 percent. The project is therefore employing sustainable building development practices to maximize energy efficiency.

Policy CE-A-7 Construct and operate buildings using materials, methods, and mechanical and electrical systems that ensure a healthful indoor air quality. Avoid contamination by carcinogens, volatile organic compounds, fungi, molds, bacteria, and other known toxins.

The project would comply with this policy and maintain healthful indoor air. The project would eliminate the use of GHGs such as chlorofluorocarbons where practicable. The project is not anticipated to result in contamination by carcinogens, volatile organic compounds, fungi, molds, bacteria, or other known toxins due to its operation as office/retail/entertainment space.

Policy CE-A.8 Reduce construction and demolition waste in accordance with Public Facilities Element, Policy PF-I.2, or be renovating or adding on to existing buildings, rather than constructing new buildings.

The Carroll Canyon Commercial Center will reduce construction and demolition waste to the extent feasible.

Policy CE-A.9 Reuse building materials, use materials that have recycled content, or use materials that are derived from sustainable or rapidly renewable sources to the extent possible.

The Carroll Canyon Commercial Center will use recycled/sustainable materials for construction and during operation to the extent feasible. The project will recycle construction and demolition debris as appropriate.

Policy CE-A.10 Include features in buildings to facilitate recycling of waste generated by building occupants and associated refuse storage areas.

The Carroll Canyon Commercial Center will provide space for individual building occupants to implement recycling practices within their buildings.

Policy CE-A.11 Implement sustainable landscape design and maintenance.

The Carroll Canyon Commercial Center will use landscaping that minimizes water use, utilizes

efficient irrigation practices, and reduces the use of pesticides.

Through implementation of these practices, the Carroll Canyon Commercial Center will not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Significance of Impacts

Emissions of GHGs were quantified for both construction and operation of the Carroll Canyon Commercail Center project. Operational emissions were calculated assuming a "business as usual" operational scenario as well as an operational scenario with GHG reduction measures employed. Based on the analysis, quantifiable emission reductions that will be implemented through state and local requirements demonstrate that emissions will be reduced by more than 28.3 percent below "business as usual" levels. The Carroll Canyon Commercial Center project would therefore be consistent with the goals of AB 32. Additionally, the project is consistent with the goal and policies of the City of San Diego General Plan. The proposed project would not result in a significant impact relative to plans, policies, or regulations aimed at reducing GHG emissions.

Mitigation Measures

The project does not result in a conflict with an applicable plan, policy, or regulation adopted for the purposed of reducing emissions of greenhouse gases. No mitigation is required.

5.6 ENERGY

In the City of San Diego, energy, in the form of electricity and gas, is provided by San Diego Gas and Electric (SDG&E). Information contained in this section is based on information obtained from SDG&E. Please see Appendix J, *Letters/Responses to Service Providers*, for detailed information provided by SDG&E for the proposed project.

5.6.1 Existing Conditions

Energy is regulated by Title 24, Part 6, of California's Energy Efficiency Standards for Residential and Nonresidential Buildings. The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. New standards went into effect in October 2005.

SDG&E, a subsidiary of Sempra Energy, provides natural gas and electricity service to the project site and the City of San Diego as a whole. SDG&E forecasts future natural gas and power consumption demand on a continual basis, primarily for installation of transmission and distribution lines. In situations where projects with large power loads are planned, this is considered together with other loads in the project vicinity, and electrical substations are upgraded as necessary. Direct impacts to electrical and natural gas facilities are addressed and mitigated by SDG&E at the time incoming development projects occur.

Appendix F of the CEQA Guidelines requires that EIRs include a discussion of the potential energy impacts of a proposed project, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. According to Appendix F, the means of achieving energy conservation corresponds to decreasing overall per capita energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources.

Electricity. The State of California produces approximately 82 percent of its electricity and imports the remaining 18 percent. The California Independent System Operator (ISO) governs the transmission of electricity from power plants to utilities. Electricity to San Diego County is transferred via 138 kilo volts (kV) lines at Camp Pendleton, and a 500 kV line near Jacumba. Additionally, there are four power plants within San Diego County: South Bay (Duke Energy) - 693 mega watts (MW), Encina (Cabrillo Power) - 965 MW, San Onofre Nuclear Generation Station (SCE) - 2,150 MW, and the Palomar Energy Power Plant, Escondido (SDG&E) - 550 MW that began operating in the summer 2006.

Electricity distribution lines in the project area are located underground. Each year, SDG&E allocates capital funds for the purposes of converting overhead electric distribution lines. Under provisions of Rule 20A established by the California Public Utilities commission, the City may designate major streets for undergrounding the overhead lines. In general, all new commercial, industrial, and residential developments are required to accept the underground service.

SDG&E has the capacity to meet the present demand for electrical service, and there are no service deficiencies in the existing distribution system (see Appendix J). In addition, a variety of energy conservation programs are provided by SDG&E to City residents and businesses. These programs include:

- Conducting surveys to determine energy use and recommending energy efficiency measures to reduce energy use
- Providing discounts for retrofitting lighting, refrigeration, and mechanical equipment with energy efficient technologies
- Incentives for using energy during non-peak hours to reduce peak-hours demand

Title 24 of the California Administrative Code sets efficiency standards for new construction, regulating energy consumed for heating, cooling, ventilations, water heating, and lighting. These building efficiency standards are enforced through the City's building permit process.

The City of San Diego Council Policy 900-14 encourages private sector developers to voluntarily participate in a program to conserve energy. Projects which meet the criteria of the Community Energy Partnership Program, such as compliance with the EPA Energy Start for Buildings Program, and which exceed minimum Title 24 requirements by a certain percentage can receive expedited review of ministerial plan checks as an incentive. Title 24 has mandatory measures for insulation, exterior doors, infiltration and moisture control, space conditioning, water heating and plumbing, and lighting.

SDG&E facilities surround the project site within public streets. There are existing electric lines undergrounded in Carroll Canyon Road along the project frontage and in nearby streets.

Natural Gas. Natural gas sources for the California include in-state sources (16 percent), Canada (28 percent), the Rockies (10 percent), and the Southwest (46 percent). Gas from outside sources enter the state through large high-pressure gas lines. These transmission lines feed natural gas storage areas located in Orange and northern Los Angeles counties, which serve all of southern California. From these storage facilities, high pressure gas transmission lines enter San Diego County from the north inland area (Rainbow area). A 30-inch transmission line veers to the coast, and a 16-inch line continues inland.

According to SDG&E, the current natural gas distribution system is in good operating condition and is adequate to meet the current demand. No improvements are planned at this time.

5.6.2 Impact Analysis

Thresholds of Significance

The City of San Diego does not have significant thresholds for Energy, and CEQA Guidelines Appendix "G" does not contain a specific threshold relative to Energy. However, CEQA Guidelines Appendix "F" does provide some guidance in evaluating impacts associated with Energy. Based on the guidance provided in CEQA Guidelines Appendix F, for the evaluation of the project's potential impacts on energy, the following threshold will apply:

> A project has the potential to have a significant effect on energy if it would generate a demand for energy (electricity and natural gas) that would exceed the planned capacity of energy suppliers.

Issue 1

Would the construction and operation of the proposed project result in the use of excessive amounts of electrical power?

Issue 2

Would the proposed project result in the use of excessive amounts of fuel or other forms of energy (including natural gas, oil, etc.)?

Impact Analysis

The project site has been developed with an office complex, surface parking, and landscaping. Therefore, electricity and natural gas facilities exist at the project site to serve the proposed uses.

SDG&E has indicated that the current energy system would be sufficient to service the project, and that SDG&E will serve the project. A letter from SDG&E states SDG&E gas and electric services can be made available for the Carroll Canyon Commercial Center project (see Appendix J). No adverse effects to non-renewable energy resources are anticipated with development of the project site as proposed by the Carroll Canyon Commercial Center project. Furthermore, the project would not result in the use of excessive amounts of fuel or electricity and would not result in the need to develop additional sources of energy.

While energy use at the Carroll Canyon Commercial Center project would not be excessive, the project would incorporate several measures directed at minimizing energy use. The project's sustainable design features are presented in Table 5.6-1, *Carroll Canyon Commercial Center Project Sustainable Design Features*, below.

Table 5.6-1. *Carroll Canyon Commercial Center Project Sustainable Design Features*

SITE DESIGN

- At least one principal participant of the project team is a LEED Accredited Professional.
- Located within ¼-mile of one or more transit stops.
- Provide secure bicycle racks and/or storage.
- Use of materials with recycled content.
- A minimum of 10% (based on cost) of the total materials value will derive from materials or products that have extracted, harvested, or recovered, as well as manufactured, within 500 miles of the project site.
- A minimum of 50% of wood-based materials and products to be certified in accordance with the Forest Stewardship Council's (FSC) Principles and Criteria for wood building components.

GRADING and CONSTRUCTION

- Create and implement an erosion and sediment control plan for all construction.
- Recycle and salvage at least 50% of non-hazardous construction debris.
- Meet or exceed the recommended Control Measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 1995, Chapter 3.
- Protect stored on-site or installed absorptive materials from moisture damage.
- Adhesives, sealants, and sealant primers will comply with SCAQMD.
- Aerosol adhesives will comply with Green Seal Standard for commercial Adhesives.
- Paints and coatings uses on the interior of the building will comply with the Green Seal Standard and SCAQMD.
- Composite wood and agrifiber products will contain no added urea-formaldehyde resins.
- Laminated adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies will contain no added urea-formaldehyde resins.

- Individual lighting controls will be provided for a minimum of 90% of building occupants.
- Lighting system controllability will be provided for all shared multi-occupant spaces to enable lighting adjustment that meets group needs and preferences.
- The design of HVAC systems and building envelope will meet the requirements of ASHRAE Standard 55-2004, Thermal Comfort Conditions for Human Occupancy.

PARKING

- Provide electrical plugs in parking garage for electric/electric hybrid vehicles.
- Provide vegetated open space within the project boundary to exceed requirements by 25%.
- Place a minimum of 50% of parking spaces under cover.

EXTERIOR LIGHTING

- Design exterior lighting so that all site and building mounted luminaries produce a maximum initial luminance value no greater than 0.20 horizontal and vertical foot-candles at the site boundary and no greater than 0.01 horizontal foot-candles 15 feet beyond the site.

BUILDING DESIGN FEATURES

- Use water-conserving fixtures.
- Use 20% less water than the water use baseline calculated for the building.
- Buildings designed to comply with Title 24 requirements.
- Zero use of CFC-based refrigerants.
- Select refrigerants and HVAC&R that minimize or eliminate the emission of compounds that contribute to ozone depletion and global warming.
- Does not use fire suppression systems that contain ozone-depleting substances (CFCs, HCFCs, or Halons).

SOLID WASTE MANAGEMENT/RECYCLING

- Provide easily accessible areas to serve buildings that are dedicated to the collection and storage of non-hazardous materials for recycling.
- Recycle a minimum of 75 percent of construction materials.
- Separate construction debris into material-specific containers to facilitate reuse and recycling and to increase the efficiency of waste reclamation.

Strive for a recycled content target of five percent of construction materials.

LANDSCAPE

Irrigation

- State of the art equipment that distributes water in controlled amounts and at controlled times to maximize water efficiency and optimize plant growth.
- Water distribution electronically controlled through a computer system that uses historical data and real time weather conditions.
- Irrigation systems control to allow water to be distributed to plant material with similar watering needs to avoid over/underwatering.
- Use of weather and rain sensors to monitor current conditions and control the system accordingly.
- Utilization of reclaimed water (when available) for irrigation minimizing the need for potable water in the landscape.

Planting

- Grouping of plant material based on the water demands for the specific plant material while still achieving the overall design intent.
- Selection of plant material its adaptability to the region and climate.
- Careful and selective use of enhanced planting (lusher material and seasonal color requiring more water and maintenance) where they have the most impact on the user.
- Use of native or low water/low maintenance material in outlying areas away from the general user.
- Limited use of turf. Where use, selection of turf varieties for their durability, maintenance needs and low water consumption.
- Use of trees throughout the project to provide shading to users and reduce heat gains on buildings and the heat island effect throughout the site.
- Selection of mix of deciduous trees to allow shade in the summer and sun penetration in the cooler

winter months.

Materials

- Use of recycled materials, where appropriate.
- Use of precast concrete pavers, decomposed granite and post consumer products.
- All planting areas include a 2" layer of a recycled organic mulch to maintain soil moisture, soil temperature and reduce weeding.
- Selection of lighter colored hardscape materials to reduce the heat island effect.

In addition to the energy efficient components provided in Table 5.6-1, the project would comply with the Uniform Building Code (UBC) and Title 24 requirements for building materials and insulation in order to reduce unnecessary loss of energy.

The project incorporates a selection of vertical landscape elements such as trees, large shrubs, and climbing vines to shade southern and western building façades to reduce heating in summer and increase solar heat gain in winter months.

Significance of Impacts

The project would increase demand for energy in the project area and SDG&E's service area. However, no adverse effects on non-renewable resources are anticipated. The project would follow UBC and Title 24 requirements for energy efficiency and would incorporate sustainable design features directed at reducing energy consumption.

Mitigation Measures

No significant impacts associated with energy would occur. Therefore, no mitigation measures are required.

5.7 NOISE

Ldn Consulting prepared a *Noise Analysis* (April 9, 2013), which examines the potential for noise effects of the Carroll Canyon Commercial Center project. The noise analysis for the Carroll Canyon Commercial Center project is summarized in this section, and the entire report is included as Appendix E to this EIR.

5.7.1 Existing Conditions

Acoustical Fundamentals

Noise is defined as unwanted or annoying sound which interferes with or disrupts normal activities. Exposure to high noise levels has been demonstrated to cause hearing loss. The individual human response to environmental noise is based on the sensitivity of that individual, the type of noise that occurs, and when the noise occurs.

Sound is measured on a logarithmic scale consisting of sound pressure levels known as a decibel (dB). The sounds heard by humans typically do not consist of a single frequency but of a broadband of frequencies having different sound pressure levels. The method for evaluating all the frequencies of the sound is to apply an A-weighting to reflect how the human ear responds to the different sound levels at different frequencies. The A-weighted sound level (dBA) adequately describes the instantaneous noise, whereas the equivalent sound level depicted as equivalent continuous sound level (Leq) represents a steady sound level containing the same total acoustical energy as the actual fluctuating sound level over a given time interval.

The CNEL is the 24 hour A-weighted average for sound, with corrections for evening and nighttime hours. The corrections require an addition of five decibels to sound levels in the evening hours between 7 PM and 10 PM and an addition of 10 decibels to sound levels at nighttime hours between 10 PM and 7 AM. These additions are made to account for the increased sensitivity during the evening and nighttime hours when sound appears louder.

A vehicle's noise level is derived from a combination of the noise produced by the engine, exhaust, and tires. The cumulative traffic noise levels along a roadway segment are based on three primary factors: the amount of traffic, the travel speed of the traffic, and the vehicle mix ratio or number of medium and heavy trucks. The intensity of traffic noise is increased by higher traffic volumes, greater speeds, and increased number of trucks.

Because mobile/traffic noise levels are calculated on a logarithmic scale, a doubling of the traffic noise or acoustical energy results in a noise level increase of 3 dBA. Therefore the doubling of the traffic volume, without changing the vehicle speeds or mix ratio, results in a noise increase of 3 dBA. Mobile noise levels radiate in an almost oblique fashion from the source and drop off at a rate of 3 dBA for each doubling of distance under hard site conditions and at a rate of 4.5 dBA for soft site conditions. Hard site conditions consist of concrete, asphalt, and hard pack dirt while soft site conditions exist in areas having slight grade changes, landscaped areas, and vegetation. On the other hand, fixed/point sources radiate outward uniformly as it travels away from the source. Their sound levels attenuate or drop off at a rate of 6 dBA for each doubling of distance.

The most effective noise reduction methods consist of controlling the noise at the source, blocking the noise transmission with barriers. To be effective, a noise barrier must have enough mass to prevent significant noise transmission through it and be high enough and long enough to shield the receiver from the noise source. A safe minimum surface weight for a noise barrier is 3.5 pounds/square foot (equivalent to three-quarter-inch plywood), and the barrier must be carefully constructed so that there are no cracks or openings.

Barriers constructed of wood or as a wooden fence must have minimum design considerations as follows: the boards must be three-quarter-inch thick and free of any gaps or knot holes. The design must also incorporate either overlapping the boards at least one inch or utilizing a tongue-and-grove design for this to be achieved.

On-Site Noise Impacts (Land Use Compatibility)

Noise is one factor to be considered in determining whether a land use is compatible. Land use compatibility noise factors are presented in Table 5.7-1, *City of San Diego Noise Land Use Compatibility Chart*, which is refered to as Table K-4 within the *California Environmental Quality Act Significance Determination Thresholds for the City of San Diego*, January 2011. Compatible land uses are shaded, and incompatible land uses are unshaded. The transition zone between compatible and incompatible should be evaluated by the environmental planner to determine whether the use would be acceptable based on all available information and the extent to which the noise from the proposed project would affect the surrounding uses.

Additionally, if the project is proposed within the Airport Land Use Compatibility Overlay Zone, as defined in Chapter 13, Article 2, Division 15 of the San Diego Municipal Code, the potential exterior noise impacts from aircraft noise would not constitute a significant environmental impact. However, the City's *Significance Determination Thresholds* recommends that structures within an Airport Land Use Compatibility Overlay Zone must also follow the requirements as shown in Table 5.7-1.

Traffic Noise Increases (Off-Site)

In accordance with CEQA, a project should not have a noticeable adverse impact on the surrounding environment. Community noise level changes greater than 3 dBA, or a doubling of the acoustic energy, are often identified as audible and considered potentially significant, while changes less than 1 dBA will not be discernible to local residents. In the range of one to 3 dBA, humans who are very sensitive to noise may perceive a slight change. For the purposes for this analysis, direct and cumulative roadway noise impacts would be considered significant if the project increases noise levels for a noise sensitive land use by 3 dBA CNEL and if the project increases noise levels above an unacceptable noise level per the City's General Plan along a roadway segment.

Table 5.7-1. *City of San Diego Noise Compatibility Guidelines*

Land Use Category	Exterior Noise Exposure (dBA CNEL)				
	60	65	70	75	
Open Space and Parks and Recreational					
Community & Neighborhood Parks; Passive Recreation					
Regional Parks; Outdoor Spectator Sports, Golf Courses; Athletic Fields; Outdoor Spectator Sports, Water Recreational Facilities; Horse Stables; Park Maint. Facilities					
Agricultural					
Animal Raising, Maintain & Keeping; Commercial Stables					
Residential					
Single Units; Mobile Homes; Senior Housing		45			
Multiple Units; Mixed-Use Commercial/Residential; Live Work; Group Living Accommodations **For uses affected by aircraft noise, refer to Policies NE-D.2. & NE-D.3.*		45	45*		
Institutional					
Hospitals; Nursing Facilities; Intermediate Care Facilities; Kindergarten through Grade 12 Educational Facilities; Libraries; Museums; Places of Worship; Child Care Facilities		45			
Vocational or Professional Educational Facilities; Higher Education Institution Facilities (Community or Junior Colleges, Colleges, or Universities)		45	45		
Cemeteries					
Sales					
Building Supplies/Equipment; Food, Beverages & Groceries; Pets & Pet Supplies; Sundries, Pharmaceutical, & Convenience Sales; Wearing Apparel & Accessories			50	50	
Commercial Services					
Building Services; Business Support; Eating & Drinking; Financial Institutions; Assembly & Entertainment; Radio & Television Studios; Golf Course Support			50	50	
Visitor Accommodations		45	45	45	
Offices					
Business & Professional; Government; Medical, Dental & Health Practitioner; Regional & Corporate Headquarters			50	50	
Vehicle and Vehicular Equipment Sales and Services Use					
Commercial or Personal Vehicle Repair & Maintenance; Commercial or Personal Vehicle Sales & Rentals; Vehicle Equipment & Supplies Sales & Rentals; Vehicle Parking					
Wholesale, Distribution, Storage Use Category					
Equipment & Materials Storage Yards; Moving & Storage Facilities; Warehouse; Wholesale Distribution					
Industrial					
Heavy Manufacturing; Light Manufacturing; Marine Industry; Trucking & Transportation Terminals; Mining & Extractive Industries					
Research & Development				50	

	Compatible	Indoor Uses	Standard construction methods should attenuate exterior noise to an acceptable indoor noise level. Refer to Section I.
		Outdoor Uses	Activities associated with the land use may be carried out.
	Conditionally Compatible	Indoor Uses	Building structure must attenuate exterior noise to the indoor noise level indicated by the number for occupied areas. Refer to Section I.
		Outdoor Uses	Feasible noise mitigation techniques should be analyzed and incorporated to make the outdoor activities acceptable. Refer to Section I.
	Incompatible	Indoor Uses	New construction should not be undertaken.
		Outdoor Uses	Severe noise interference makes outdoor activities unacceptable.

Source: City of San Diego Noise Element (2008)

Existing Noise Environment On-Site

Noise measurements were taken June 21, 2012, in the afternoon hours using a Larson-Davis Model LxT Type 1 precision sound level meter, programmed, in "slow" mode, to record noise levels in A-weighted form. The sound level meter and microphone were mounted on a tripod, five feet above the ground, and equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 150.

Monitoring location 1 (M1) was located roughly 425 feet from the centerline of Interstate 15 in the western portion of the site. Monitoring location 2 (M2) was located in the eastern portion of the site approximately 725 feet from Interstate 15 (Figure 5.7-1, *Ambient Noise Monitoring Locations*).

The results of the noise level measurements are presented in Table 5.7-2, *Measured Ambient Noise Levels*. The noise measurements were monitored for a time period of one hour during heavy traffic conditions. The existing noise levels in the project area consisted primarily of traffic from Interstate 15 and two aircraft over flights during each measurement. The ambient Leq noise levels measured in the area of the project during the afternoon hours were found to be 60 to 70 dBA Leq based on the separation from Interstate 15. The statistical indicators Lmax, Lmin, L10, L50 and L90, are given for the monitoring location. As can be seen from the L90 data, 90 percent of the time, the noise level is approximately 60 to 68 dBA from Interstate 15.

Table 5.7-2. *Measured Ambient Noise Levels*

Measurement Identification	*Description*	*Time*	*Noise Levels (dBA)*					
			Leq	**Lmax**	**Lmin**	**L10**	**L50**	**L90**
M1	Western Portion	1:00 – 1:20 p.m.	69.5	71.5	67.3	70.7	69.4	68.2
M2	Lower Pad	1:25 – 1:45 p.m.	60.6	62.2	59.0	61.5	60.4	59.5

Source: Ldn Consulting, Inc. June 30, 2011

Existing Site with Respect to MCAS Miramar Noise Contours

The proposed project is near the Marine Corps Air Station (MCAS) Miramar over flight areas and is within the 60 dBA CNEL noise contour pocket due to aircraft over flights but is outside the 65 dBA CNEL contour due to flight paths and the altitude at which the aircraft are operating when passing near the site (Figure 5.7-2, *MCAS Miramar Noise Contours*). Noise from MCAS Miramar would not be expected to exceed 65 dBA CNEL; therefore, no mitigation to any structures or sensitive land uses due to aircraft is required.

Sensitive Biology

The project is surrounded by mature eucalyptus trees. These trees could provide nesting habitat for sensitive raptor species. The project could result in indirect impacts to nesting raptors, if there is nesting in the adjacent areas, associated with noise that can occur during construction.

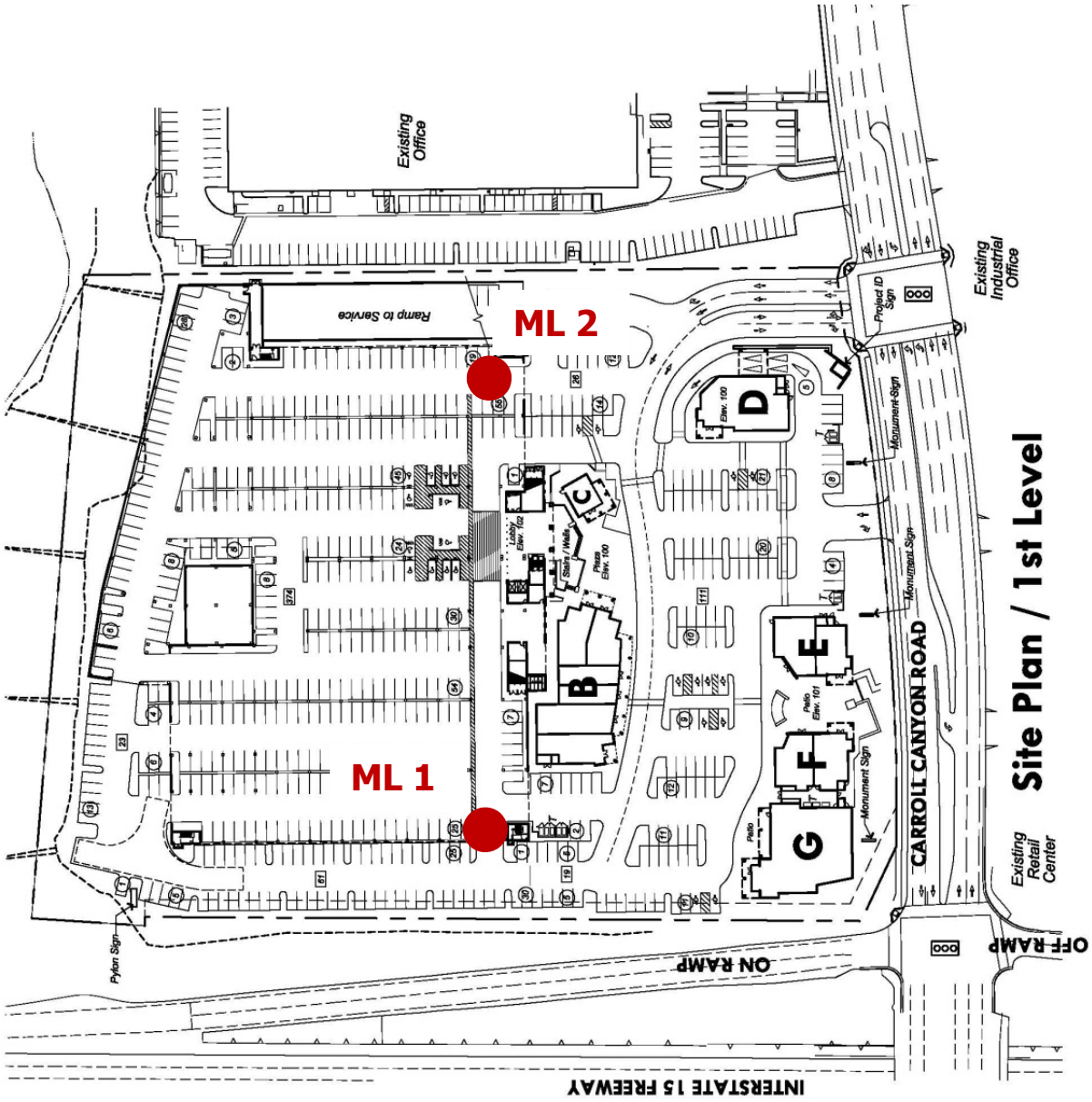


Figure 5.7-1. ***Ambient Noise Monitoring Locations***

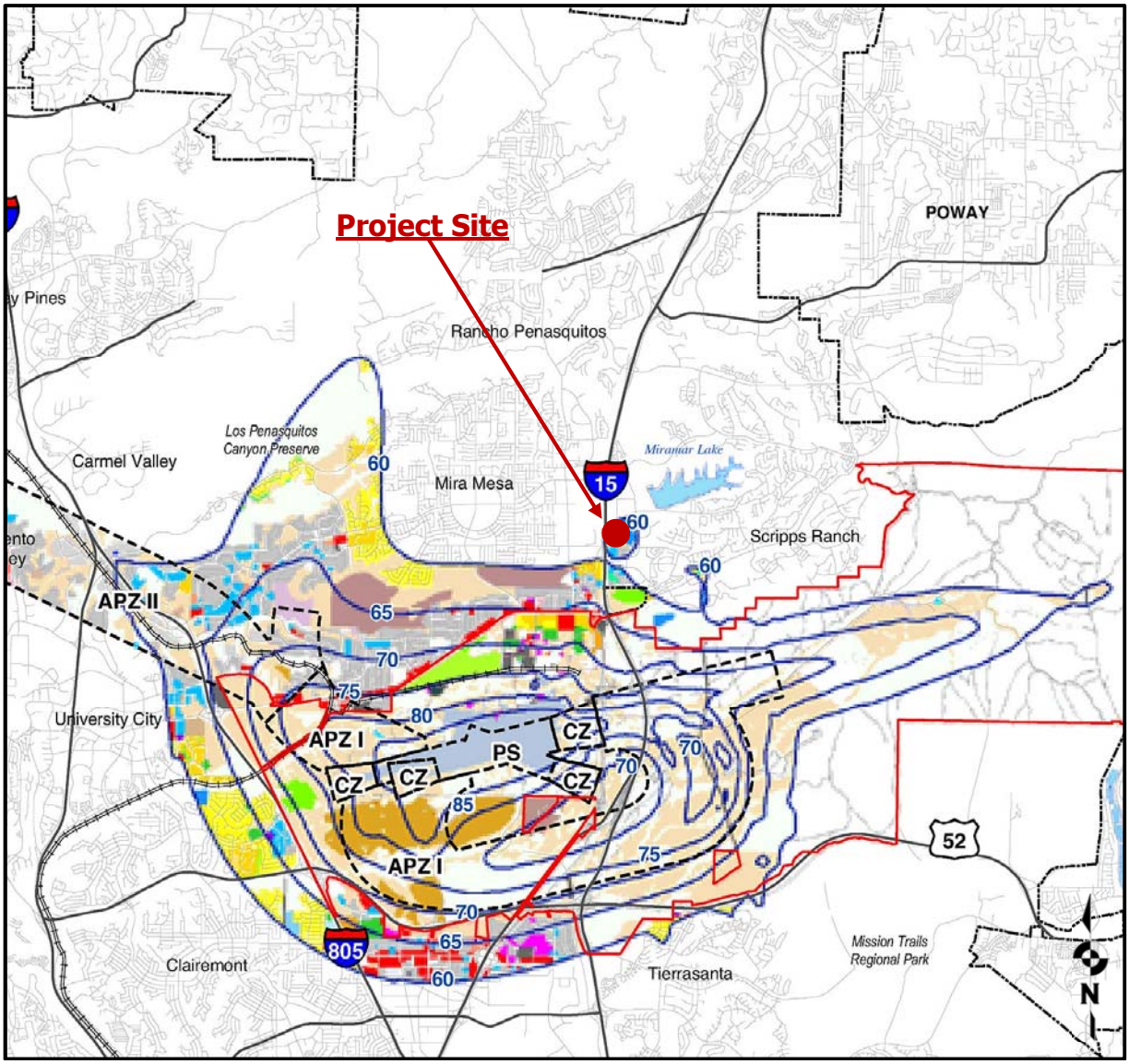


Figure 5.7-2. *MCAS Miramar Noise Contours*

5.7.2 Impact Analysis

Thresholds of Significance

The City of San Diego *Development Services Department Significance Determination Guidelines* (City of San Diego 2011) is used to determine whether project noise could have a significant impact. Thresholds are provided for traffic-generated noise, Federal Department of Housing and Urban Development (HUD)-funded projects and noise, airport noise, noise from adjacent stationary uses, impacts to sensitive wildlife, construction noise, and noise/land use compatibility. The relevant noise thresholds for the project are as provided below.

Construction Noise

Division 4 of Article 9.5 of the City of San Diego Municipal Code addresses the limits of disturbing or offensive construction noise. The Municipal Code states that with the exception of an emergency, it should be unlawful to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12– hour period from 7 AM to 7 PM.

Operational Noise

The generation of noise for certain types of land uses could cause potential land use incompatibility. A project which would generate noise levels at the property line which exceed section 59.5.0401 of the City's Municipal Code is considered potentially significant, as identified in Table 5.7-3, *Sound Level Limits in Decibels (dBA).*

Table 5.7-3. *Sound Level Limits in Decibels (dBA)*

Land Use	Time of Day	One-Hour Average Sound Level (decibels)
1. Single Family Residential	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45 40
2. Multi-Family Residential (Up to a maximum density of 1/2000)	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50 45
3. All other Residential	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55 50
4. Commercial	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	65 60 60
5. Industrial or Agricultural	any time	75

Source: City of San Diego Noise Ordinance Section 59.5.0401

The City's Significance Thresholds for determining interior and exterior noise impacts form traffic-generated noise are presented in table K-2 of the City's CEQA Significance Determination Thresholds. That table is presented below:

Traffic Noise Significance Thresholds (dB(A) CNEL)

Structure or Proposed Use that would be impacted by Traffic Noise	Interior Space	Exterior Useable Space [1]	General Indication of Potential Significance
Single-family detached	45 dB	65 dB	Structure or outdoor useable area[2] is < 50 feet from the center of the closest (outside) lane on a street with existing or future ADTs > 7500 [3]
Multi-family, schools, libraries, hospitals, day care, hotels, motels, parks, convalescent homes.	Development Services Department (DSD) ensures 45 dB pursuant to Title 24.	65 dB	
Offices, Churches, Business, Professional Uses	n/a	70 dB	Structure or outdoor usable area is < 50 feet from the center of the closest lane on a street with existing or future ADTs > 20,000
Commercial, Retail, Industrial, Outdoor Spectator Sports Uses.	n/a	75 dB.	Structure or outdoor usable area is < 50 feet from the center of the closest lane on a street with existing or future ADTs > 40,000.

[1] If a project is currently at or exceeds the significance thresholds for traffic noise described above and noise levels would result in less than a 3 dB increase, then the impact is not considered significant.

[2] Exterior usable areas do not include residential front yards or balconies, unless the areas such as balconies are part of the required usable open space calculation for multi-family units.

[3] Traffic counts are available from: San Diego Regional Association of Governments (SANDAG) Regional Economic Development Information System (REDI): http://cart.sandag.cog.ca.us/REDI/ SANDAG Traffic Forecast Information Center: http://pele.sandag.org/trfic.html

Section 59.5.0401 of the Noise Ordinance sets a more restrictive operational exterior noise limit for the commercial uses of 65 dBA Leq for daytime hours of 7 a.m. to 7 p.m. and 60 dBA Leq during the noise sensitive nighttime hours of 7 p.m. to 7 a.m. Most of the project components will only operate during the daytime hours. However, a few may operate during nighttime or early morning hours and, therefore, the most restrictive and conservative approach is to apply the 60 dBA Leq nighttime standard at the property lines.

Issue 1

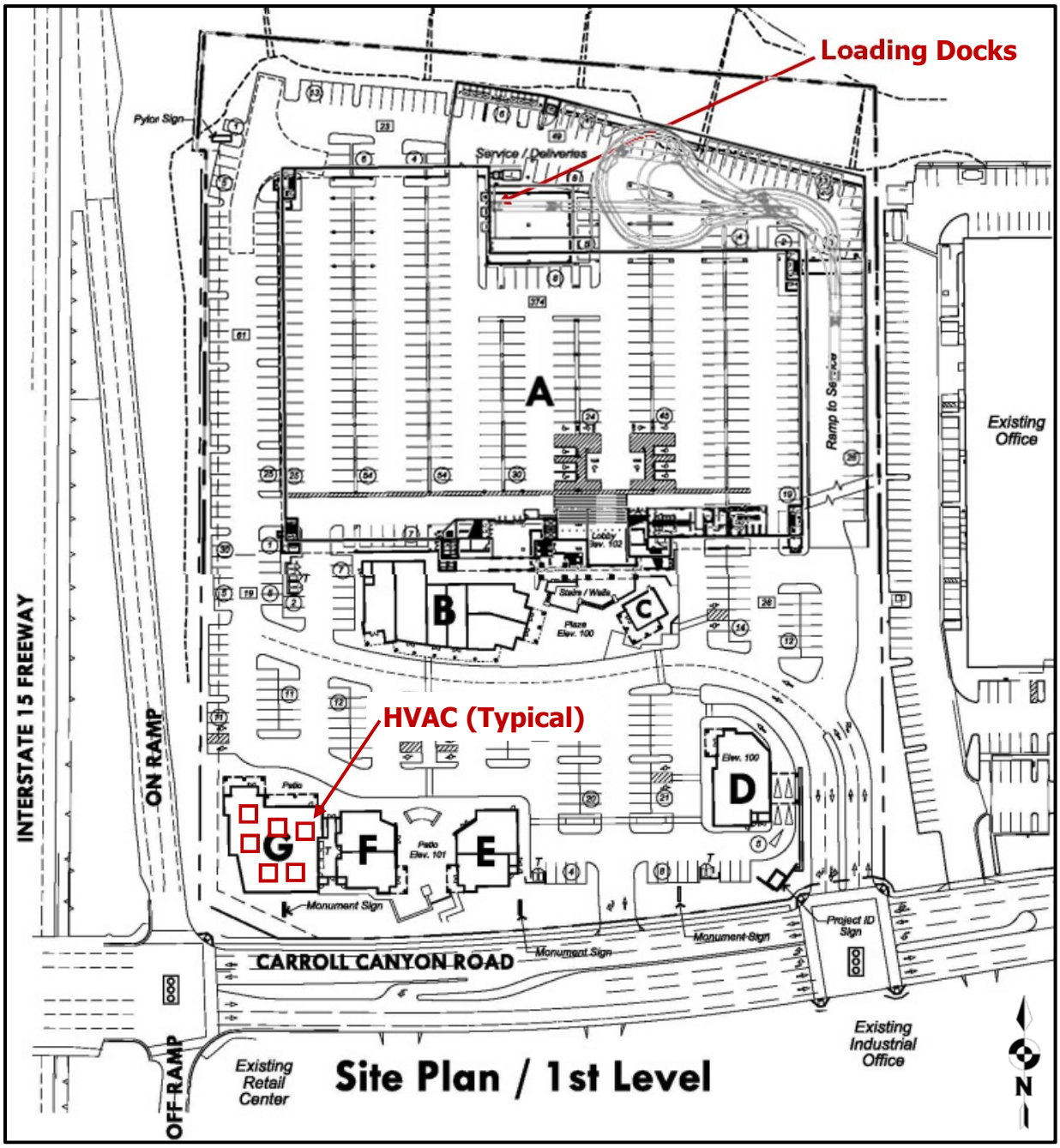
Would the project result in or create a significant increase in the existing ambient noise levels?

Impact Analysis

A significant increase in the existing ambient noise environment can be associated with temporary noise levels (i.e., construction), stationary noise sources (i.e., HVAC systems), and vehicular noise levels. For the Carroll Canyon Commercial Center project, vehicular noise would be generated by traffic accessing the project, as well as truck deliveries. The analysis of noise impacts under this issue question addresses operational noise – both from vehicles accessing the site as well as from stationary sources. For a discussion of temporary noise impacts (i.e., construction noise), please see the analysis under *Noise Issue 4*, below.

Stationary Noise

The proposed project would result in new stationary noise and noise associated with delivery operations. Noise from a fixed or point source drops off at a rate of 6 dBA for each doubling of distance. Which means a noise level of 70 dBA at five feet would be 64 dBA at ten feet and 58 dBA at 20 feet. A review of the proposed project indicates that noise sources such as large delivery trucks "Building C," occasional small box truck deliveries at the other uses, and the roof mounted HVAC are the primary sources of stationary noise. The location of the noise sources including the three loading docks, located on the second level of Building A, and a typical HVAC layout are depicted in the graphic below. (See Figure 3-5a, *Carroll Canyon Commercial Center Site Plan*, for the locations of various buildings referenced in this section.)


Loading Docks
Pylon Sign
Service / Deliveries
A
B
C
D
E
F
G
Ramp to Service
Existing Office
HVAC (Typical)
INTERSTATE 15 FREEWAY
ON RAMP
OFF RAMP
CARROLL CANYON ROAD
Monument Sign
Monument Sign
Monument Sign
Project ID Sign
Existing Retail Center
Existing Industrial Office
Site Plan / 1st Level
N

Each building within the Carroll Canyon Commercial Center project would have a series of HVAC units for temperature control and are discussed in more detail below. All project property lines surrounding the project site are considered commercial and would therefore be subject to the 65 dBA hourly noise standard during the daytime hours between 7:00 a.m. and 7:00 p.m. and a 60 dBA standard during the evening hours at the adjacent commercial property lines as shown in Table 5.7-2, above.

This section provides a detailed description of the reference noise level measurement results. It is important to note that the following projected noise levels assume the worst-case noise environment with the delivery trucks, drive-thru activities, and roof-top mounted HVAC all occurring at the same time. In reality, these noise levels would vary throughout the day. The mechanical ventilation may operate during nighttime hours and the delivery trucks may arrive during early evening or morning hours.

Each anticipated noise source is provided in more detail below to determine if direct noise impacts would occur. A cumulative noise level analysis with associated distances, noise reductions, and calculations of the proposed sources is provided at the end of this section along with a table showing the individual noise sources and their associated property line noise levels.

Delivery Trucks – Off-Site

In order to evaluate the truck delivery noise impacts, the analysis utilized reference noise level measurements taken at an Albertson's Shopping Center in San Diego, California, in 2011. The measurements include truck drive-by noise, truck loading/unloading, and truck engine noise. The unmitigated exterior noise levels for truck drive-by noise and truck engine noise were measured at 68.5 dBA Leq at a distance of 25 feet from the loading dock.

The onsite maneuvering associated with the delivery trucks consists of the truck entering the site, from Carroll Canyon Road, turning into the site near Building D, proceeding up the service ramp to the rear of Building A, then backing into the loading dock. The truck is anticipated to leave the site in the same fashion.

There are three loading docks proposed on the second level of Building A approximately 325 feet from the nearest property line to the east. The remaining property lines are located 650 feet or more from the loading dock activities and the anticipated noise levels would be at least 6 dBA lower than the worst case scenario to the east. Therefore, the eastern property line was analyzed to determine impact potential.

To be conservative, it was assumed the truck could be operating for the entire hour, even though in reality it would be closer to 15 minutes of the total time required during the delivery process; and a noise level of 68.5 dBA Leq was utilized. The loading dock is slightly over 325 feet from the nearest property lines to the east. The noise level reduction due to distance would be -22.3 dBA. This would result in an unshielded noise level of 46.2 dBA Leq for a single truck and 51.0 dBA Leq for three trucks, which is below the 60 dBA Leq property line standards. The northern and southern property lines are located more than 650 feet from the loading dock; as a result, the noise levels will be well below the City's standards. The western property line is located farther from the site, along Interstate 15; no impacts are anticipated due to the increased distances. The noise level reductions due to distance to the nearest property lines are provided in Table 5.7-4, *Delivery Truck Noise Levels*.

Table 5.7-4. *Delivery Truck Noise Levels (Nearest Property Lines)*

Property Line	*Distance To Observer Location (Feet)*	*Hourly Reference Noise Level (dBA)*	*Noise Source Reference Distance (Feet)*	*Noise Reduction Due To Distance (dBA)*	*Noise Level At Property Line (dBA)*	*Quantity per hour*	*Property Line Cumulative Noise Level (dBA)**
East	325	68.5	25	-22.3	46.2	3	51.0
South	650	68.5	25	-28.3	40.2	3	45.0
North	650	68.5	25	-28.3	40.2	3	45.0

*Complies with the nighttime Noise Standard of 60 dBA.

No direct impacts are anticipated. Additionally, the remainder of the buildings on-site would have small (step side or box trucks) arriving during normal business hours to bring deliveries. Therefore, truck noise is anticipated to be lower than the City's noise standards and no impacts were found.

Delivery Trucks – On-Site

In order to evaluate the truck delivery noise impacts to the proposed onsite uses, the analysis used the same reference noise levels as stated above from the Albertson's Shopping Center in San Diego, California, in 2011. The onsite maneuvering associated with the delivery trucks would remain the same and the nearest affected proposed building would be Building D to the west. Using the same methodology above on the offsite analysis, it was assumed the truck could be operating for the entire hour even though in reality it would be closer to 15 minutes of the total time required during the delivery process and a noise level of 68.5 dBA Leq was utilized. The loading dock is slightly over 305 feet from the nearest onsite use, Building B, to the west and the noise level reduction of -21.7 dBA due to distance. This would result in an unshielded noise level of 46.8 dBA Leq, which is below the most restrictive 60 dBA Leq standard. It should be noted: no outdoor usable areas are proposed near the delivery truck operations. Therefore, no impacts are anticipated onsite due to the delivery truck operations and no mitigation measures are required.

Air Conditioning Units – Off-Site

Rooftop mechanical ventilation units (HVAC) will be installed on the proposed buildings. In order to evaluate the HVAC noise impacts, the analysis utilized reference noise level measurements taken at a Shopping Center in Encinitas, California, in 2010 for Buildings B through G. The unshielded noise levels for these smaller HVAC units were measured to be 65.9 dBA Leq at a distance of six feet. The Anchor Building (Building A) is anticipated to have larger 18-ton units having a reference noise level as high as 76 dBA at three feet.

To predict the worst-case future noise environment, a continuous reference noise level of 65.9 dBA Leq at six feet was used to represent the roof-top mechanical ventilation system for Buildings B through G and a reference noise level of 76.0 dBA at three feet (or 70 dBA Leq at six feet) for Building A. Even though the mechanical ventilation system will cycle on and off throughout the day, this approach presents the worst-case noise condition of continuous operation. In addition, these units are designed to provide cooling during the peak summer daytime periods, and it is unlikely that all the units will be operating continuously.

The noise levels associated with the roof-top mechanical ventilation system will be limited with the proposed parapet walls on each building that will vary in height but will be roughly as high if not

higher than the HVAC units to shield them both visually and acoustically based upon the architectural plans. Hence, the parapet wall will block the line-of-sight and reduce the noise levels at the adjacent property lines. To be conservative, no noise level reductions from the parapet walls that are planned were accounted for in this noise analysis. The number of HVAC units that are proposed for each building is also provided below. The noise level reductions due to distance from the property lines to the east, south, and north are provided in Tables 5.7-5, 5.7-6, and 5.7-7, respectively. The western property line is located farther from the site, along I-15; therefore, no impacts are anticipated due to the increased distances.

Table 5.7-5. *Project HVAC Noise Levels (Eastern Property Line)*

Building	*Distance To Observer Location (Feet)*	*Hourly Reference Noise Level (dBA Leq)*	*Noise Source Reference Distance (Feet)*	*Noise Reduction Due To Distance (dBA)*	*Noise Level At Property Line Single Unit (dBA Leq)*	*Quantity*	*Property Line Cumulative Noise Level (dBA Leq)**
A	125	70.0	6	-26.4	43.6	12	54.4
B	320	65.9	6	-34.5	31.4	8	40.4
C	190	65.9	6	-30.0	35.9	4	41.9
D	115	65.9	6	-25.7	40.2	6	48.0
E	330	65.9	6	-34.8	31.1	6	38.9
F	440	65.9	6	-37.3	28.6	6	36.4
G	505	65.9	6	-38.5	27.4	6	35.2
Cumulative Noise Level from ALL HVAC Units							**55.8**

*Complies with the nighttime Noise Standard of 60 dBA.

Table 5.7-6. *Project HVAC Noise Levels (Southern Property Line)*

Building	*Distance To Observer Location (Feet)*	*Hourly Reference Noise Level (dBA Leq)*	*Noise Source Reference Distance (Feet)*	*Noise Reduction Due To Distance (dBA)*	*Noise Level At Property Line Single Unit (dBA Leq)*	*Quantity*	*Property Line Cumulative Noise Level (dBA Leq)**
A	485	70.0	6	-38.2	31.8	12	42.6
B	350	65.9	6	-35.3	30.6	8	39.6
C	350	65.9	6	-35.3	30.6	4	36.6
D	175	65.9	6	-29.3	36.6	6	44.4
E	150	65.9	6	-28.0	37.9	6	45.7
F	150	65.9	6	-28.0	37.9	6	45.7
G	150	65.9	6	-28.0	37.9	6	45.7
Cumulative Noise Level from ALL HVAC Units							**52.3**

*Complies with the nighttime Noise Standard of 60 dBA.

Table 5.7-7. *Project HVAC Noise Levels (Northern Property Line)*

Building	Distance To Observer Location (Feet)	Hourly Reference Noise Level (dBA Leq)	Noise Source Reference Distance (Feet)	Noise Reduction Due To Distance (dBA)	Noise Level At Property Line Single Unit (dBA Leq)	Quantity	Property Line Cumulative Noise Level (dBA Leq)*
A	730	70.0	6	-41.7	28.3	12	39.1
B	970	65.9	6	-44.2	21.7	8	30.8
C	970	65.9	6	-44.2	21.7	4	27.7
D	1,115	65.9	6	-45.4	20.5	6	28.3
E	1,145	65.9	6	-45.6	20.3	6	28.1
F	1,145	65.9	6	-45.6	20.3	6	28.1
G	1,145	65.9	6	-45.6	20.3	6	28.1
Cumulative Noise Level from ALL HVAC Units							**41.0**

*Complies with the nighttime Noise Standard of 60 dBA.

The proposed HVAC operational noise levels are in compliance with the City's daytime 65 dBA Leq property line standard and would also meet the most restrictive nighttime standard of 60 dBA Leq. No impacts are anticipated, and no mitigation is required. Additionally, most of the HVAC units would be located farther from the southern property line as part of the proposed project. Therefore, the HVAC noise is anticipated to be lower than what is currently experienced at the residences to the south.

Air Conditioning Units – On-Site

In order to evaluate the HVAC noise impacts to the proposed onsite uses, the analysis used the same reference noise levels as stated above from the Shopping Center in Encinitas, California, in 2010. The unshielded noise levels for these smaller HVAC units were measured to be 65.9 dBA Leq at a distance of six feet and Building A is anticipated to have larger 18-ton units having a reference noise level as high as 76 dBA at three feet. Even though the mechanical ventilation system will cycle on and off throughout the day, this approach presents the worst-case noise condition of continuous operation. The noise levels associated with the roof-top mechanical ventilation system would be limited with the proposed parapet walls on each building. Hence, the parapet wall would block the line-of-sight and reduce the noise levels at the adjacent property lines. To be conservative, no noise level reductions from the parapet walls that are planned were accounted for in this noise analysis. The number of HVAC units that are proposed for each building is also provided below.

The worst-case onsite noise levels from the proposed HVAC units would occur at the ground level area between Buildings E, F, and G near the southern portion of the site. The noise level reductions due to distance at the worst-case onsite location, near these buildings, are provided in Table 5.7-8, *On-Site HVAC Noise Levels*. As can be seen in Table 5.7-8, the anticipated unshielded noise level is 57.3 dBA, which is below the most restrictive 60 dBA Leq standard. Therefore, no impacts are anticipated and no mitigation is required. Additionally, the HVAC units would be shielded from the onsite uses from the roof parapets and the HVAC noise is anticipated to be lower.

Table 5.7-8. *On-Site HVAC Noise Levels (Worst Case)*

Building	*Distance To Observer Location (Feet)*	*Hourly Reference Noise Level (dBA Leq)*	*Noise Source Reference Distance (Feet)*	*Noise Reduction Due To Distance (dBA)*	*Noise Level At Property Line Single Unit (dBA Leq)*	*Quantity*	*Property Line Cumulative Noise Level (dBA Leq)**
A	165	70.0	6	-28.8	41.2	12	52.0
B	120	65.9	6	-26.0	39.9	8	48.9
C	55	65.9	6	-19.2	46.7	4	52.7
Cumulative Noise Level from ALL HVAC Units							**56.3**

*Complies with the nighttime Noise Standard of 60 dBA.

It is possible to calculate the cumulative noise levels from the proposed project at the property lines from each of the proposed noise sources. Although not all the noise sources are close enough to each other in distance or sound level to create a cumulative effect, this method is considered ultra-conservative in determining impact potential. The cumulative noise levels are calculated separately at the three nearest property lines and provided below in Table 5.7-9, *Cumulative Noise Levels*. These projections include the delivery truck noise and noise from the HVAC systems of all buildings. The cumulative noise levels are all below the most restrictive 60 dBA threshold, and no impacts would occur.

Table 5.7-9. *Cumulative Noise Levels (Off-Site Property Lines)*

Property Line	Delivery Truck Noise Level (dBA Leq)	HVAC Noise Levels (dBA Leq)	Property Line Cumulative Noise Level (dBA Leq)*
East	51.0	55.8	**57.1**
South	45.0	52.3	**46.4**
North	45.0	41.0	**57.3**

*Complies with the nighttime Noise Standard of 60 dBA.

Based upon the property line noise levels determined above, none of the proposed noise sources directly or cumulatively exceeds the property line standards at the property lines. Therefore, the proposed development related operational noise levels comply with the daytime and nighttime noise standards at the residences. No impacts are anticipated, and no mitigation is required.

The worst-case operational noise levels onsite occur at the ground level area between Buildings G, M, and N as identified above in the HVAC assessment. The addition of the delivery trucks to this area, which are located more than 345 feet away, would only cumulatively add 1 dBA to the HVAC noise levels. This would equate to a cumulative noise level of approximately 57.3 dBA, which is below the most restrictive 60 dBA threshold and no impacts would occur.

Transportation Noise Levels

On-Site Transportation Related Noise Levels

The Federal Highway Administration's (FHWA) Traffic Noise Model (TNM), version 2.5, was used to predict existing and future peak hour traffic noise levels at specific receptor locations within the project site (FHWA 2004). Inputs to TNM include the three-dimensional coordinates of the roadways; noise receptors; topographic features; existing or planned barriers that would affect noise

propagation; and vehicle volumes and speeds, by type of vehicle.

For purposes of evaluating future land use compatibility, peak hour traffic volumes were developed based on the maximum hourly traffic volume LOS C traffic conditions. The traffic mix used in the modeling was developed from Caltrans truck traffic data. Table 5.7-10, *Traffic Parameters*, presents the roadway parameters used in the analysis including the average daily traffic volumes, vehicle speeds, and the hourly traffic flow distribution (vehicle mix) for the future conditions. The vehicle mix provides the hourly distribution percentages of automobiles, medium trucks, and heavy trucks for input into the noise model.

Table 5.7-10. *Traffic Parameters*

Source	Roadway Type	Average Daily Traffic (ADT)[1]	Vehicle Speeds (MPH)	Vehicle Mix %		
				Auto	Medium Trucks	Heavy Trucks
Interstate 15	Freeway	310,000	65	96.2[2]	2.3	1.5
Carroll Canyon Road	4 Lane	29,000	40	96[3]	2	2

[1] Source: Project Traffic Study, LOS Engineering 2012.
[2] Caltrans 2010 Annual Average Daily Truck Traffic on the California State Highway System.
[3] Typical City vehicle mix data.

The required coordinate information necessary for the traffic noise prediction model input was taken from the preliminary site plans. To predict the future noise levels, the preliminary site plans were used to identify the pad elevations, the roadway elevations, and the relationship between the noise source(s) and the receptor areas. Traffic was consolidated into a single lane for each directional flow of the roadways and the roadway segments were extended beyond the observer locations.

The buildout analysis was modeled utilizing the roadway parameters as described above in Table 5.7-10. The only potential outdoor use areas at the project site are located at the proposed pedestrian plaza uses in the center of the site, near Buildings A through C and in the southern portion between Buildings E and F. Receptors were modeled five feet above grade level and coincide with potential exterior use areas associated with the proposed project. Noise contours were developed based upon the traffic modeling to determine compatibility with the proposed uses. The results of the noise contours are shown in Figure 5.7-2, *Future Traffic Noise Contours*. It should be noted: no shielding for the existing or proposed buildings was accounted for in the modeling; therefore, the noise contours are considered worst case. The proposed onsite buildings would reduce the noise levels by as much as five to ten decibels or more depending on the location.

Based upon these findings, the future noise levels at the ground level outdoor areas of the proposed outdoor spaces are below the City of San Diego 75 dBA CNEL exterior noise level standard for commercial retail uses. Therefore, no impacts are anticipated and no mitigation is required.

The proposed project is near the Marine Corps Air Station (MCAS) Miramar over flight areas, but is not within any of the identified noise contours due to infrequent aircraft over flights and the altitude at which the aircraft are operating when passing near the site. Noise from MCAS Miramar would not be expected to exceed 60 dBA CNEL; therefore, no mitigation to any structures or sensitive land uses due to aircraft is necessary.